Financial Analysts Journal

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IN OUR NOVEMBER - DECEMBER ISSUE

Changing Trends in the Paper Industry, by Karl R. Bendetsen, president of The Champion Paper and Fibre Company; Institutional Investing, by Richard W. Lambourne; How Fire and Casualty Companies Invest, by Shelby Cullom Davis; and Investment Casting—A Big Growth Industry, by William M. Weaver, Jr., president of Howe Sound Company. Also a comprehensive preview of a 1962 book on Money and Credit by A. Hamilton Bolton, Bolton, Tremblay & Company.

Sales-minded source of new products

THIS IS GEN TEL

Developing a family of new and better products for industry is the mission of our newly created Sylvania Special Products Division. And they are doing it!

Though less than a year old, they have already introduced a number of promising new products. Among them is the new Sylvania PANELESCENT® Sign-Lite — a handsome panel of electroluminescent light that's versatile, inexpensive to install and operate, and so rugged it stays lighted even when shot full of holes.

Another example is the new Flexi-core transformer—the first major improvement in transformers in 50 years. It is smaller, more efficient and cooler-running. Because of its revolutionary design, it can be turned out in custom lots at mass-production prices.

Their work is yet another way General Telephone & Electronics brings together the talents of many people and the facilities of many companies to advance the science of communications through sight and sound.

It is another way we are working for what we believe is bound to be—a growing future in a growing America.

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GENERAL TELEPHONE & ELECTRONICS

730 Third Avenue, New York 17

GENERAL SYSTEM

going abroad for peace and profit

There is some evidence that this country is at odds with itself with reference to investments in foreign countries.

On the one hand our government is promising enormous sums to help stimulate industry and raise standards of living in many uncommitted countries.

At the same time there are rumblings of stringent tax measures on overseas operations that would make private investment considerably more difficult than it is at present.

We, at Celanese, believe there is an opportunity as well as an obligation, for American business in foreign operations. We believe that by making available to other peoples the technology and skills we possess in such abundance, we can help them help themselves to a better life, make friends and allies for the Free World point of view.

But we believe this can only be done with the enthusiastic support of our government. This support must permit a reasonable return on capital risked abroad. And in many cases it will require low cost non-equity government financing to make possible large scale plant and utilities installations.

Celanese basic technology happens to be that of polymer chemistry—and corporate policy calls for developing the widest possible range of products from this source.

Since World War II the world's less industrialized countries have shown great eagerness to produce locally the petrochemical and cellulose products we have developed and the more sophisticated industrial nations, notably Great Britain, Germany, Canada, Mexico, and Japan have become equally willing partners.

Methods of making available Celanese technology vary to fit the needs, laws, customs and tax structures of the country involved. To many just-developing markets we ship finished or semi-finished products. We have found that marketing and merchandising can profitably precede plant construction in many areas. And the margin for error is markedly reduced.

Despite the many political and technical problems of foreign business, we believe that the needs of people everywhere represent a challenge as well as a profit opportunity and we are prepared to do our part to fill them. Celanese Corporation of America, 522 Fifth Avenue, New York 36, New York.

Celanese

CHEMISTRY FOR THE MARKETS OF THE WORLD

Newport News Shipbuilding and Dry Dock Company

Profit and Loss Information for the six fiscal months ended June 26, 1961 and June 27, 1960

	Six Fiscal Months Ended	
	June 26, 1961	June 27, 1960
Gross income from shipbuilding, ship conversions and repairs, hydraulic turbines and other work	$101,588,999	$90,453,334
Operating profit	$ 8,233,061	$11,552,755
Deduct—Provision for taxes on income	4,225,000	6,500,000
Net profit before allowances	$ 4,008,061	$ 5,052,755
Deduct—Increase in allowances on long-term contracts	200,000	550,000
Net profit—Amount	$ 3,808,061	$ 4,502,755
Net profit—Per share outstanding at the close of the period	$2.34	$2.79

The above information is based in large part upon estimates and is subject to year-end audit, adjustments and charges and is not necessarily indicative of the full year's results. The underlying contract estimates as at June 27, 1960 have since been revised, and those as at June 26, 1961 will be revised hereafter.

The Company records profits on its long-term shipbuilding contracts through estimates on the percentage-of-completion basis, and on its other long-term contracts as billings are made thereon. The profits so estimated and recorded are subject to the provision of such allowances as may be considered advisable, taking into account the stage of completion of each contract, possible increases in costs not included in the estimates, guarantee liabilities, unsettled contract adjustments and other factors. The performance of such contracts may extend over periods as long as several years, and revisions in the contract estimates and allowance requirements during performance and upon final contract settlements have the effect of including in subsequent accounting periods adjustments necessary to reflect the results indicated by the revised estimates and allowances. The amounts reserved as allowances reflect the reductions in Federal and state income taxes which would result if the matters covered by the allowances materialize, and aggregated $4,200,000 at June 26, 1961, $4,000,000 at December 31, 1960, $3,050,000 at June 27, 1960 and $5,825,000 at December 31, 1959 of which $3,325,000 was applied as a direct contract adjustment in June, 1960.

A substantial part of the Company's business is with departments and agencies of the United States and the contracts therefor may be subject to profit limitations, renegotiation, and to termination at the convenience of the Government.

Quarterly Statement of Billings, Estimated Unbilled Balance of Major Contracts and Number of Employees

	Six Fiscal Months Ended	
	June 26, 1961	June 27, 1960
Billings during the period from shipbuilding, ship conversions and repairs, hydraulic turbines and other work	$ 89,125,425	$ 98,083,950
Estimated balance of major contracts unbilled at the close of the period	$436,419,181	$255,718,802
Equivalent number of employees, on a 40-hour basis, working during the last week of the period	17,836	16,762

On July 20, 1961 a contract was executed with the Department of the Navy for the construction of 4 Polaris nuclear-powered submarines at a ceiling price of $154,900,000, with provision for later negotiation of a definitive price. Including this contract the Company's backlog of unbilled estimated contract balances is presently at a record high of about $575,000,000.

The Company reports income from long-term shipbuilding contracts on the percentage-of-completion basis; such income for any period will therefore vary from the billings on the contracts.

By Order of the Board of Directors

July 26, 1961

R. I. FLETCHER, Financial Vice President

Financial
Analysts Journal

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September-October, 1961

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'Humpty Dumpty' in Wall Street

If Charles Lutwidge Dodgson (known to most of us as Lewis Carroll) were still alive, this nineteenth century mathematician and church deacon would probably be delighted by the manner in which twentieth century Wall Street market letter writers use "Alice in Wonderland" to elucidate their adventurous economic observations.

In fact, there appears to be a revival of interest in Alice's adventures—a mingling of fantastic childhood absurdities with familiar details of every-day life that also makes delightful adult reading. Maybe Dr. C. Stewart Sheppard, director of the recently-established *Institute of Chartered Financial Analysts,* should make Lewis Carroll's immortal words required reading—for some of his students undoubtedly will become market letter writers.

Such interest is highlighted by the following excerpt gleaned from the August (and august) business letter prepared by The First National City Bank of New York:

> "In *Through the Looking Glass,* Alice discovered that words can be rather slippery things:
>
> "'When I use a word,' Humpty Dumpty said in rather a scornful tone, 'it means just what I choose it to mean—neither more nor less.'
>
> "'The question is,' said Alice, 'whether you can make words mean different things'."

And then the bank's letter, in the somewhat scornful tone of Humpty Dumpty, decries the "growth" of the National Rural Electric Cooperative Association as *free growth.* This is the same subject which the *Financial Analysts Journal* has dealt with in detail and arrived at an identical conclusion: Pools of Federal money are competing unfairly with free enterprise.

Yes indeed, Humpty Dumpty, the Mad Hatter, the March Hare and the White Rabbit (not forgetting the White Queen and the Red Queen) would, in the jargon of yesterday *and* today, have a real ball in the Wall Streets of America.

We say this because numerous satiric and serious developments continue to make ludicrous Wall Street chronicles. Witness the above excerpt from a bank's business letter.

So, a deep bow to Lewis Carroll, and hail to his "successors": the existing breed of stock market and business letter writers.

* * *

Uncle Sam Seeks Financial Analysts

Being always happy to see the words *financial* and *analysts*—and particularly delighted when we run across the combination of *Financial Analysts*—we were more than pleased to see a pamphlet, recently issued by the United States Government's Housing and Home Finance Agency, the front of which reads: "Career Opportunities for . . . Financial Analysts."

And that's the story. The Housing and Home Finance Agency is recruiting Financial Analysts with degrees in finance, banking and credit, economics, statistics, accounting, law, or business administration. Depending on experience, qualified men (and we'd presume women) will receive starting salaries ranging from $4,345 up to $12,210. The top salary range apparently is $13,510, this being the compensation for a person starting at $12,210.

From our vantage point this is an excellent career for those interested in working for a highly-respected and efficient U. S. Government Agency. Locations for those interested include Washington, D. C., to New York, Philadelphia, Atlanta, Chicago, Fort Worth, San Francisco and San Juan, Puerto Rico. Sounds like an excellent opportunity! Address the Director of Personnel, Office of the Administrator, Housing and Home Finance Agency, Washington 25, D. C.

A look at what's ahead in the realities of space exploration

Some predictions from Douglas —builders of Thor which has launched 80% of all successful U.S. satellites & space probes in the past two years

Our mastery of space has advanced so rapidly that only diehard pessimists doubt the moon and planets will know our footsteps within a few decades.

Already a vehicle capable of orbiting a 19,000-pound payload, or driving 5,000 pounds to escape velocity, or lofting 2,500 pounds to Mars or Venus is being built in the U.S. This is Saturn, taller than a 14-story building, with an initial thrust of 1.5 million pounds. Its second stage, under construction for NASA by Douglas, will use a cluster of liquid hydrogen-oxygen engines of unique design.

The world knows a man can rocket into space and return. Can he survive for long periods? Douglas studies give a strong affirmative. Zero gravity and artificial G require further study. Radiation is a continuing problem, but reports from Discoverer XVII, one of 46 space projects launched by the Douglas Thor rocket, show the threat less serious than was first thought.

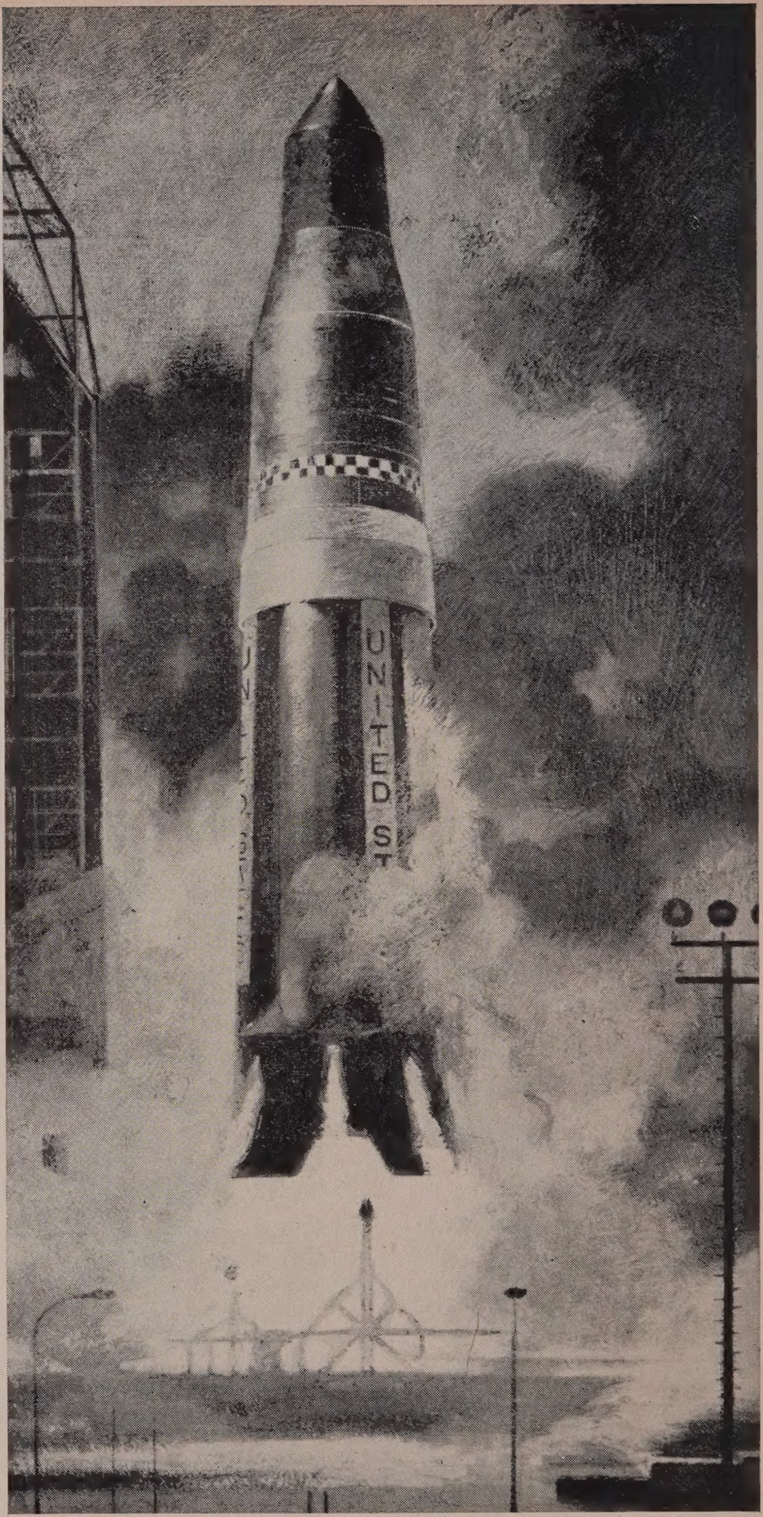
The cost of space travel? A breakthrough in nuclear power, which Douglas engineers confidently predict, should cut the operational cost of a trip to the moon to about $900 per passenger. Other power sources, already under study, may even open such stars as Sirius and Alpha Centauri to travel.

The DC-8 Jetliner, an example of Douglas aero-space leadership

Few of us will ever be lunar commuters, but growing millions are learning about a new kind of travel through the DC-8 jet.

Here is an airplane that slices through time at 10 miles a minute, opens the world to all who have an urge to get up and go places.

Next trip, fly a DC-8 jet, newest of which is the DC-8 Series 50, fastest long-range jetliner in the sky.



Douglas is building Saturn's 2nd stage.

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From the President's Desk

The summer months bring out many inherent characteristics in us and probably the most pronounced is laziness which is contributed to vacations, other people's vacations, hot weather, and general inactivity as we pause before a heavy fall schedule.

This period has been used to select permanent committee chairmen for the various activities of the Financial Analysts Federation. It has been gratifying to have unanimous acceptance from all of those who were asked to fill appointments of responsibility. Each chairman has been asked to make his committee selections after contacting the individual Society. This important point was emphasized at the Society Presidents Meeting in Richmond, last May.

In an effort to maintain a high degree of interest, appoint deserving people to the permanent committees, and continue to recruit new people with new ideas, it was determined that officers at the local level could be of real assistance. Also, with the growth of the Federation—in size and stature—it is important to improve our channels of communication. At the same time, some of our dedicated Analysts have been "over-appointed" because of their willingness and desire to serve the Federation. Your President has endeavored to relieve some of our over-worked volunteers.

The Institute of Chartered Financial Analysts program is coming along nicely. Much spade work is being accomplished and the enthusiasm with which Dr. C. Stewart Sheppard is tackling this tremendous undertaking is very gratifying. The Council of the Institute is meeting in Charlottesville in mid-September to review with the Business School basic ideas and to approve policy which will govern activities of the Institute. Additional information on procedure will be forthcoming.

Editors of the Financial Analysts Journal are working on another cumulative index which will include 1945 through 1961. The index should be extremely valuable to Analysts and institutions maintaining libraries of the Journal.

NEW MEMBER SOCIETY

I am most happy to announce that the Financial Analysts Society of Jacksonville, Fla., has been admitted to the Federation. Initial members of the Jacksonville Society total 35.

Officers of the Jacksonville Society are:

Allen C. Ewing, president; Anders F. Myhr, vice president; W. Ashley Verlander, secretary; and W. Ernest Allen, Jr., treasurer.

Members of the Jacksonville Society, and their firm affiliations follow:

Claude Kirk and W. Ashley Verlander, American Heritage Life Insurance Co.; George L. Cain, Atlantic Coast Line Railroad Co.; James A. Cranford, William G. Dickie, Edward W. Lane, and Anders F. Myhr, The Atlantic National Bank of Jacksonville; W. Ernest Allen, Jr., William R. Barnett, and Powers Williams, The Barnett National Bank of Jacksonville.

Also: Allen C. Ewing, Allen C. Ewing & Co.; Harry M. Wilson, Jr., The Florida National Bank of Jacksonville; Robert C. Earnest, Professor, Charles A. Rovetta, Dean, The Florida State University, Tallahassee, Florida; Leo A. Brinkley, Jr., M. S. Niehaus, Gulf Life Insurance Company; Jacob F. Bryan, III, Thomas H. Pate, Independent Life & Accident Insurance Co.; A. Minis, Jr., Minis & Co., Inc.; J. H. Quaritius, N. Clement Slade, Jr., Peninsular Life Insurance Company; John Burris, Robert J. Pierce, Pierce, Carrison, Wulbern, Inc.

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George Stevenson Kemp, Jr.

PRESIDENT'S REPORT

ON NORTHERN STATES POWER COMPANY

Owned by 78,900 shareholders and serving over 600 communities in Minnesota, North Dakota, South Dakota and Wisconsin

MEET THE MEN WHO LEAD IN PLANNING NSP'S FUTURE

Here are some of NSP's "unlisted assets" — the members of the Company's Board of Directors. These are the men who provide the top-notch leadership that has helped NSP grow and prosper. Their stewardship has helped make this year just past a record one for the Company. And their long-range planning helps assure sound growth . . . even more and better service for our customers.

Behind this "first team" are supporting groups of managers and executives, specializing in the various phases of the Company's activities. And a continuing program of personnel development — within the Company — is preparing others to advance, to assume more responsibilities.

So whether it's planning an atomic power plant, promoting all-electric living, forming a "power pool" with other suppliers, NSP is geared to do the job — because it has the kind of men who get jobs done.

Allen S King

PRESIDENT, NORTHERN STATES POWER COMPANY
MINNEAPOLIS 2, MINNESOTA

NSP BOARD OF DIRECTORS

ALLEN S. KING

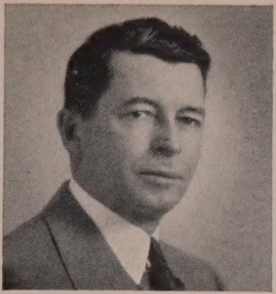
NSP President. Started working part time with NSP while in college; became a regular employee as an engineer in 1922. Came up through Company ranks to become President and Director in 1954. Director of Northwestern National Bank of Minneapolis and Northwest Bancorporation.

H. C. CUMMINS

Retired First Vice President of NSP. Past President, Shaeffer Oil and Refining Company (now Deep Rock Oil Company). Past Vice President in charge of Operating and Engineering, Public Utility Engineering and Service Corporation.

KENNETH N. DAYTON

Vice President, Director and General Merchandise Manager of Dayton's Department Store. Member, Advisory Board, Lincoln Office of Northwestern National Bank. Trustee of Carleton College.



S. P. DUFFY

President and General Manager of Our Own Hardware Company of Minneapolis, an organization owned by more than 600 retail hardware dealers. Director, Northwestern National Bank of Minneapolis and Northwest Bancorporation.

H. M. GALLAGHER

Senior Partner in the law firm of Gallagher and Madden, Waseca, Minnesota. Former Chief Justice of the Minnesota Supreme Court; former member of the State Industrial Commission.

T. G. HARRISON

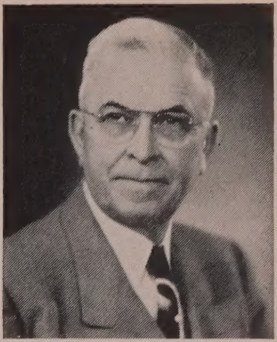
Chairman of the Board of Super Valu Stores, Inc., Director, Federal Reserve Bank, Ninth District; Director of Green Giant Company. Chairman, Trade Relations Committee of National American Wholesale Grocers' Association. Vice Chairman, Dept. of Agriculture's Food Distribution Research and Marketing Advisory Committee.

A. B. JACKSON

President and Director, St. Paul Fire and Marine Insurance Company and St. Paul Mercury Insurance Company. Director of Western Life Insurance Company, Gould National Batteries, Inc., First National Bank of St. Paul, First Bank Stock Corporation, Northwestern Bell Telephone Company.

ROBT. S. MACFARLANE

President, Northern Pacific Railway. Director, Northern Pacific Railway Company, American Smelting and Refining Company, First Bank Stock Corporation of Minneapolis, First National Bank and Trust Company of St. Paul, Pacific National Bank of Seattle, St. Paul Fire and Marine Insurance Company, Minnesota Mutual Life Insurance Company, Chicago, Burlington and Quincy Railroad.



B. C. MARKS

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P. H. McDOWELL

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DONALD C. MINARD

President, The Trane Company, Manufacturing Engineers of heating, ventilating, air conditioning and heat transfer equipment, LaCrosse, Wisconsin.

RECORD ATTENDANCE. Nearly 19,000 share owners attended the 1961 annual meeting of A. T. & T. This was the largest attendance ever recorded by any business. There was full and free discussion of many matters—evidence of democracy at work.

Now... 2,000,000 Bell Telephone Share Owners

A NEW MILESTONE IN DEMOCRACY AND AMERICAN BUSINESS

The ownership of the country's largest business by over two million people is a dramatic testimonial to the American economic system. Here, for all the world to see, is democracy at work.

The result is a communications service of increasing value to both the public and business and a vital element in national defense.

The owners of American Telephone and Telegraph Company stock are people in all walks of life, in every section of the country.

A great many are small share owners. About 290,000 own fewer than ten shares. 42% are women. An additional 31% are joint accounts, generally in the names of husband and wife. More than 300,000 are telephone employees.

In addition to the direct owners, many millions of other people have an important, beneficial interest through the holdings of their insurance companies, pension funds, investment companies, unions, savings banks, etc.

Without the money that A. T. & T. share owners have put in the business, you could not possibly have the telephone service you enjoy today. Nor would there be work and wages for over 730,000 employees.

This year alone share owners have furnished $961,000,000 in new capital by subscribing to A. T. & T. stock.

Given the opportunity to plan boldly for the future—and with earnings on a level that makes such progress possible—you can be sure that we will make further contributions to the growth and security of the nation.

BELL TELEPHONE SYSTEM

STOCKS and the BERLIN CRISIS

....What It Means to Investors

by Alan C. Poole

PRIMARILY, A FINANCIAL ANALYST is geared to study companies through management, operations, products, research and financial statistics; or, in a broader sense, he studies economic trends and stock market movements. He would be well advised, however, to spend some time examining the world situation, especially the question of Berlin, because steps being taken to avert a conflict there and bring about a possible solution could have a far-reaching effect on our economy.

Why, he may ask, should a full scale war be risked over a small piece of real estate containing only a little over two million people and strategically located in an untenable position?

The general impression the writer has received in this country is that people feel that a line must be drawn somewhere and that the dispute over West Berlin is similar to the Polish Corridor situation at the time of World War II. Actually there is a great deal more to this problem.

West Berlin is the symbol of freedom to the free Western European countries and at the same time is a keyhole through which the captives behind the Iron Curtain peek into the free world. It has served as the primary escape route to the western world; in fact, to such an extent that East Germany has been seriously hurt through the loss of many key technical personnel creating a labor shortage which threatens the economy of East Germany.

To understand this "bone in Khrushchev's throat" one must visit Western Europe. On a trip to East and West Berlin one can witness the most surprising contrast between a city still full of ruins, (many serving as homes for its depressed inhabitants) and a gay modern city where people live freely, clouded only by the threat that some day West Berlin might fall to the Soviet bloc. But West Berliners believe in America—probably much more so than any other of the West European people—and they gratefully remember the day when their city was kept alive by the airlift. They count on the Americans to defend them again, if necessary, and this confidence extends to the industrial circles of Western Germany as evidenced by the fact that many companies still operate in West Berlin, most notable of which is Siemens & Halske, Germany's large electrical and electronic firm which counts on its West Berlin plant for 20% of its total production.

The important thing to remember, however, is that not only West Berlin but Western Germany, and even the Western European countries, are counting on the United States to maintain the status quo in Berlin. Failure of the United States to take a firm stand in this area would not only result in a loss of United States prestige but could arouse fears that we might not live up to our obligations elsewhere. The Communist position, as a consequence, would be strengthened in Western Europe and the future success of the North Atlantic Treaty Organization might be completely destroyed. With this background it must be assumed that West Berlin should be defended at all costs. If not, we can look for the eventual loss of Western Europe.

Firm U. S. Stand Needed

Looking back to 1940, we recall that the fall of France resulted in a sharp decline in stock prices which was finally arrested only when it became apparent that Great Britain would hold the fort for us until such time as we could prepare for war. Unfortunately, the likelihood of a similar occurrence is extremely remote.

America's position has been considerably weakened over the past few months. Under the previous Administration strong stands were taken on Formosa and the Middle East, backed by the landing of troops. Even prior to that the Berlin airlift showed the Russians our determination to stay there. But today there seems to be a considerable weakness on the part of the United States. Strong statements were made by our Administration on Laos but they came to naught. A half-hearted attempt was made to liberate Cuba which failed through its lack of planning and indecisiveness. Finally, one of our airliners was taken from our own shores to Cuba and we did nothing more than send a note of protest.

This fragment of history must have caused Teddy Roosevelt to turn over in his grave several times. More important, however, these series of events undoubtedly led the Russians to believe that we cannot be taken seriously, and this might lead them to take the dangerous

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Alan C. Poole, research consultant and market letter writer for Hemphill, Noyes & Co., came from a diplomatic family. He lived in Berlin from 1926 to 1929 and revisited it in 1959 when he toured both East and West Berlin. As a Lieutenant Colonel and graduate of the Command and General Staff College, he has also kept in close touch with military developments.

uncalculated risk of trying to drive us out of West Berlin —an action that might easily lead to World War III.

It behooved the present Administration to take some drastic step that might convince the Russians we seriously meant business on West Berlin. The effect created by President Kennedy's speech has now been offset by the Russian astronaut's trip around the world 17 times in a little over a day. And now we are in the first stages of mobilization; but depending on the events that transpire later in the year this preparation for an emergency will probably be accelerated to a greater or lesser degree, and then the investor will feel the first effects.

A logical sequence of events would be signing a separate peace treaty. This action would nullify the Four Power Pact on Berlin and the East Germans could take over the strings being pulled from Moscow. Gradually the lanes of transportation between West Germany and West Berlin might be closed off and at this point a conflict might commence. The main question appears to be how far the Communist bloc will go in preventing the Western Powers from re-opening these lines of communication. The writer believes that a series of incidents might arise which would lead to a limited war of the Korean type. This in turn would cause the Administration to accelerate the mobilization program, declare a state of emergency, step up defense spending, raise taxes, and inflict more drastic government controls. These steps, coupled with the fear of a full-scale war, would almost inevitably lead to a serious deterioration in investor confidence. All this would suggest that the time has come for the investor to make a serious reappraisal of his investment holdings. The remainder of this article will be devoted to the writer's views and recommendations on this subject.

Inflation Not Inevitable

To answer the question of a reader who might ask, "What if the war extends beyond Berlin?", I can only say that if hostilities lead to a thermonuclear war, such a complete holocaust would be created that any investment program would have little significance. But one must plan hopefully, assuming a future and follow the philosophy "We live until we die."

Before proceeding to prescribe an investment program let us once and for all eliminate the false belief haunting Wall Street that inflation is inevitable and consequently we are certain to enter a full-scale bull market. A few simple statistics derived from the Bureau of Labor Statistics' Cost of Living Index, and Standard & Poor's 500 Stock Average and Group Stock Averages, cite some rather enlightening findings:

1. Except for the long range outlook there is no correlation between the rise in the cost of living and the price trend of common stocks. For example, from the end of 1945 to the end of 1948 the cost of living index rose 32.3% while Standard & Poor's 500 Stock Averages dropped 12.4%. This was during a period when corporate profits increased substantially. Over a longer period, from the end of 1936 to the end of 1944, the cost of living rose 27.4% and yet at the end of that period the Standard & Poor's 500 Stock Index was still 22.2% lower than it was at the beginning.

2. Even as broad an index as Standard & Poor's 500 Stock Average does not necessarily reflect group movements. During the three-year period from the end of 1945 to the end of 1948 when it dropped 12.5%, the following group averages were outstanding: crude oil producers +52.4%; coals +52.2%; rayons +19.7%; and sulphur stocks +15.6%.

3. Finally, it is interesting to note that a large budget deficit is not necessarily followed by a sharp rise in the cost of living. For example, the government incurred a deficit of $12.5 billion in the fiscal year 1959 and yet the cost of living index rose only about 1% that year and less than 2% the following year.

These findings clearly indicate that a so-called inflation caused by a stepped-up mobilization program is not necessarily going to result in higher stock prices. First, inflationary forces may be curtailed by the fact that we have more than an adequate supply of labor, materials, and productive facilities, to meet the increased requirements of the stepped-up mobilization program. Secondly, there appears to be more of a likelihood that investor confidence will decline rather than advance in the face of increasingly bad international news.

Once the false glow of attraction of equities as hedges against inflation wears off, sober appraisal might easily result in a sharp decline in stock prices. Finally, however, it should be pointed out that there will be certain industries that should benefit from the mobilization program.

Here are a few suggested courses of action:

1. Some purchasing reserves should be built up promptly because we may see substantially lower stock prices before the end of the year as international tension heightens and investor confidence is lowered.

2. Present holdings should be reviewed carefully and speculations should be eliminated except in cases where they might benefit from the present situation. Stocks in growth companies selling at high price earnings should be scrutinized carefully, especially if their market values would be vulnerable to any decline in investor confidence or any possible excess profits taxes which could hurt them considerably.

3. Stocks in companies not vital to a defense effort and without facilities for conversion into defense work should be examined to determine exactly what their prospects would be under a war economy. Movie stocks which have had a sharp runup marketwise might be particularly vulnerable. Savings and loans companies which attracted a great deal of investor interest in the past few months are likely to be hurt as there is a distinct possibility that consumer credit will be curbed to lessen inflationary pressures.

4. A thorough search should be made for issues depressed marketwise due to poor earnings, lack of investor confidence or those that might benefit from any

set-up in the mobilization program which could improve their overall earnings picture and create investor interest.

5. With respect to stocks of companies engaged in the defense program, these should be examined carefully and categorized as to whether they are good values that might benefit from increased orders or whether they might be hurt by excess profits taxes or other profit restrictions.

6. As possible eliminations, consideration should be given to stocks of companies subject to government regulation—more particularly if they are targets of the Administration's pricing policies, anti-trust action and other governmental restrictions. In a period of emergency the government normally has a much greater latitude toward taking action against such companies.

The depressed textile group is one industry that merits attention at the present time. An increase in the Armed Forces would raise the requirements for uniforms, thus benefiting these companies. It is interesting to note that at the outbreak of World War II, and at the time of the Korean conflict, textile stocks rose sharply. When one considers that the industry has apparently seen its low point this year there are many companies which offer relatively good values.

Another war-time group, relatively depressed marketwise and earnings-wise, are the railroads. These stocks were outstanding performers at the time of the Korean War and World War II and certainly merit attention at this time when increased industrial activity is almost inevitable. There are many secondary steels, machine tool and other heavy industrial companies which should certainly show improvement; and here again by shrewd selection the investor should be able to make some profitable purchases.

Finally, chemical stocks, non-ferrous metal stocks, paper stocks and, for the speculative-minded, sugar stocks should all be participants in any rise in industrial activity caused by mobilization.

An evaluation of gold mining stocks presents a problem at this time. Normally these have not done well during war-time and they certainly have been poor stocks as inflation hedges but today an almost completely different situation exists. American gold supplies have been diminishing and, as the international crisis heightens in Europe, there is no indication that gold is being sent into this country as it has been in the past. On the contrary, Europeans appear to be taking their gold and hoarding it and this has already been reflected in the slow rise in the price of gold on the London market.

Furthermore, as the budget is further unbalanced there may be greater fears about the stability of the American dollar, and this of course could cause a withdrawal of more gold from this country. Increased government expenditures for troops overseas result in an outflow of gold plus expenditures to aid other NATO countries. Although we are endeavoring to get our Allies to do more for their own countries, we are likely to authorize greater spending on their behalf as it is necessary to have their support during the Berlin crisis. Contrary to past history it is the writer's feeling that gold mining stocks might be a better buy than a sale at these levels—although this subject is highly debatable.

Status of Foreign Securities

Another question that merits the Financial Analyst's interest at the moment involves the status of foreign securities, particularly companies with production coming out of West Berlin. These stocks have been very sensitive to developments centering around this area and further reactions in their market price can be expected. Should a final settlement be reached on Berlin the economy of West Germany is in a position to move forward as it has done for some years; and the more courageous investor might take advantage of periods when the international crisis becomes more tense with an accompanying drop in German securities to purchase some of the better issues. Stocks of other Western European countries are likely to be affected by the crisis, and here again outstanding values may present themselves from time to time.

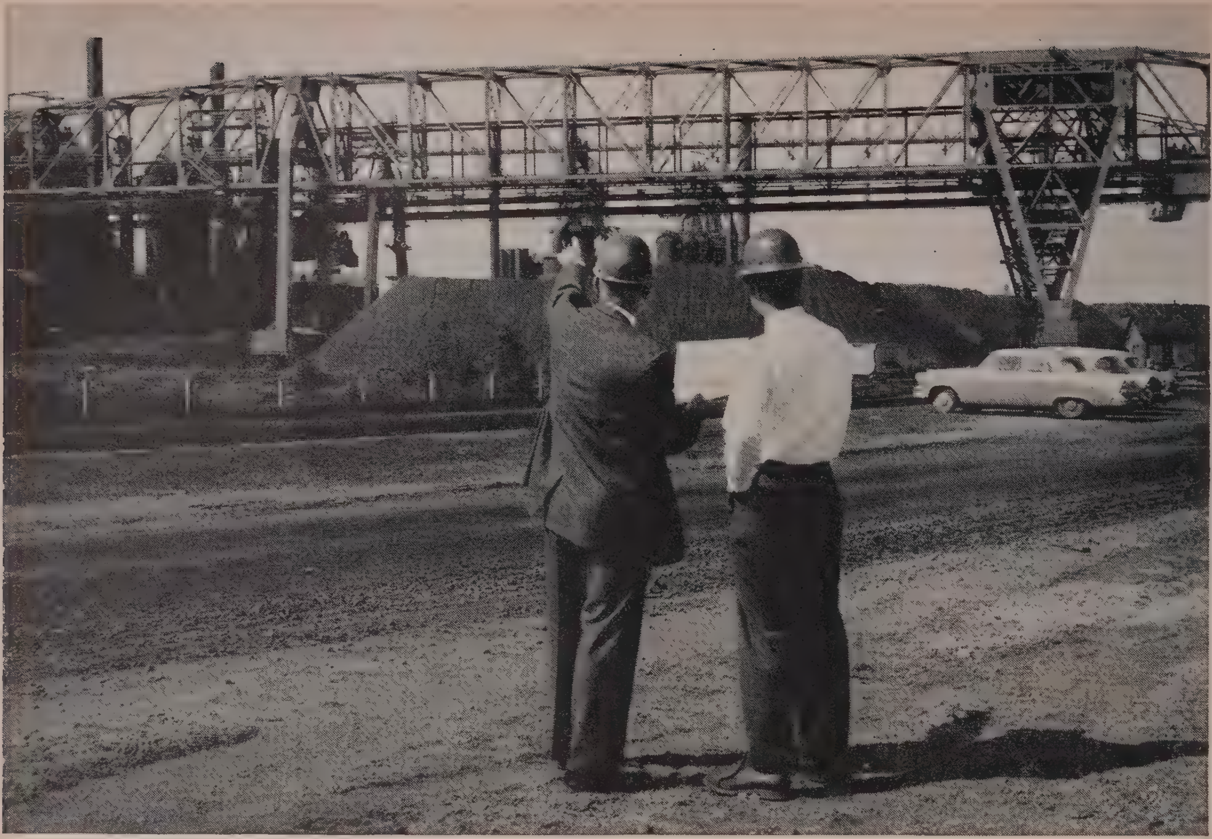
Beyond the immediate area of the stock market commodities might be given consideration. There could be excellent opportunities for profits in sugar, hides, soy beans, some of the metals, grains and wools.

Real estate might appeal to some investors, but a lot depends on its location. Real estate prices are inflated but in the past land has been an excellent inflation hedge in most cases.

The outcome of the Berlin crisis is impossible to predict but it appears that a situation has been created that makes compromise difficult for either the Western powers or the Communist bloc. Obviously some face-saving device will be employed. Otherwise there will be no settlement and war would inevitably result. During negotiations there will be many tense moments.

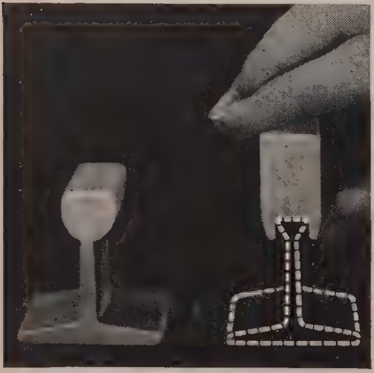
The Financial Analyst faces a serious problem in giving advice on investment policy. A cautionary approach appears best at this time to the writer as he expects a significant downward reappraisal in stock market values before the end of the year. But at the same time he believes the investor cannot continue to hold all his funds in cash or fixed income securities in spite of the uncertain future trend of stock prices. No one can consistently predict to an accurate degree the course of the stock market, and undoubtedly there will be some opportunities during this critical period for capital gains.

It is therefore desirable for the investor to have at least a portion of his funds working for him. The important thing is to keep one's investment portfolio in good order; be flexible so as to act promptly; and follow closely those issues that are most likely to be affected by the current trend of events.



Another way copper from Anaconda is helping cut the cost of getting electricity to the job

It's not a simple job to get electricity to big heavy-current motors that travel on moving cranes, ore bridges, monorails. In heavy-duty use where high amperage is needed, steel rails weighing 60 to 80 pounds per yard have carried the power. Then came extruded aluminum rails that were lighter and easier to install. But aluminum would wear and pit from friction of the current collectors unless protected by grease. Furthermore, unprotected aluminum rails if not used for a while acquire an oxide coating that is an electrical insulator.



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Forecasting the Leading Indicator of Stock Prices

by Leonard H. Lempert

AT THE SECOND ANNUAL FORECASTING CONFERENCE of the New York Chapter of the American Statistical Association, the speaker on "What Do The Indicators Say?" was asked: "What good are the leading indicators for forecasting the stock market, when stock prices themselves are one of the leading indicators?" The question points up the common misunderstanding of the part the National Bureau of Economic Research leading indicators play in forecasting anything, let alone stock prices.[1]

The unending quest for a magic word to open the door of the future has reduced the N.B.E.R.'s research on cyclical indicators to a simple list of 12 leading indicators which presumably spell "Open Sesame." The purpose of this article is to show to what extent the N.B.E.R.'s leading indicators can be of practical help in forecasting stock prices; but not by themselves alone.

The leading indicators are only part of a broader, more inclusive business cycle approach. This approach has as its starting point the basic contention or hypothesis that the nation's business activity moves in cycles of general expansions followed by similarly general recessions, contractions, and revivals which merge into the expansion phase of the next cycle; this sequence is not periodic but consistently recurs in periods varying from more than one year to as long as 10 or 20 years.[2]

These are economists words for pinning down what are more simply known as the major ups and downs in business activity. These ups and downs are not to be found within the confines of a few months; they have nothing to do with seasonally high Christmas sales and seasonally low summer heating requirements; they have nothing to do with one week of a month being higher than another week of that month; they must certainly have nothing to do with limited changes in the economy *within* a week or *within* a single day. The N.B.E.R. found the course of these major ups and downs was best followed in terms of monthly seasonally adjusted indicators of business activity. Hundreds and hundreds of various monthly (and some quarterly) statistical indicators were studied by the Bureau, including such well-known indicators as the FRB index of industrial production, unemployment, personal income, retail sales, corporate profits, etc. From this study, the Bureau designated the beginning and end of cyclical ups and downs in the economy since 1854. The longer term nature of cyclical upswings and downswings is seen from the fact that the shortest downswing lasted seven months, the shortest upswing lasted 10 months.[3]

Now, how does all this relate to stock market prices? Well, first of all, it means we must deal with compatible indicators of stock market prices. We must deal with a broad measure of stock prices, one that reflects the major ups and downs conforming to those of business activity as a whole. And we must deal with this measure on a time basis similar to that by which we measure the economy.

It is here that we encounter one of our first difficulties with many Financial Analysts; these Analysts insist on seeing the market on a day-to-day basis. They object strenuously to a business cycle approach which deals with monthly averages of stock prices.

This is understandable. The closer one is to the market, the more specific one tends to be. I have acquaintances who eschew closing daily prices like the plague; their concern is with hourly prices, and were the indexes available each minute, I have no doubt they would have nothing to do with hourly prices. Analysts with this attitude rightly point out that the difference during a single day between high and low in the Dow-Jones Industrials, or the Standard and Poor's common stock index, can represent many hundreds of thousands, sometimes millions of, dollars in stock values. The utter absurdity of stopping trading on the floor of The New York Stock Exchange to espouse the value of a cyclical indicator approach that deals in monthly averages of the Standard and Poor's common stock price index is obvious.

But virtually all of our significant knowledge about major ups and downs in the economy comes from measurements in terms of monthly data. Even if we wanted to, we could not relate minute to minute, day-to-day movements of stock prices with any similar measures of the economy; such measures do not exist in a form that constitutes a body of economic knowledge.

First Cyclical Function

The first function then of the cyclical indicator approach is to place stock prices within a business cycle perspective as the National Bureau defines the business cycle. To do this, stock prices are placed on a monthly average basis and treated as simply another economic or business indicator. In this way, the volatile day-to-day movements of stock prices are purposefully and intentionally eliminated. Nevertheless, these ups and downs in monthly stock price averages are anything but insignificant. In the last six business cycle ups and downs (as measured by the Standard and Poor's common stock index); the upswings have ranged from a low of +32% to a high of +249%; the downswings have ranged from a low of —10% to a high of —44%. If you are not concerned about such swings, the cyclical indicator approach is not for you. For even if it were to forecast accurately, it would not be forecasting anything of value. This article is directed toward the large number of Financial Analysts who find moves of such magnitudes in monthly averages of interest.

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[1] Footnotes at end of article.

Leonard H. Lempert is director of Statistical Indicator Associates, publisher of the Statistical Indicator Reports. He holds a B.S. degree in Business Administration from Lehigh University, and has taught various courses in economics and statistics.

So much for what we are measuring and attempting to forecast. Let us move along and briefly discuss the place of monthly stock prices with respect to the business cycle.

We find that the major ups and downs in the economy conform very closely to the major ups and downs in the monthly averages of stock prices. Going back to the 1870's we find the monthly indicator of stock prices has missed only two of the 22 business peaks and only two of the 23 business lows that have occurred since that time. There have also been three times when major ups and downs in the monthly averages of stock prices occurred while the economy was still moving steadily upward or downward.[4]

When we say the monthly average of stock prices has conformed very closely to major ups and downs in the economy, and when we say 20 of the major peaks in business activity and 21 of the major lows in business activity have had corresponding peaks and troughs in the monthly averages of stock prices, we do not mean they have occurred at precisely the same time. On the contrary, we have found that, on the average, the peaks in stock prices have occurred four to five months before the peaks in general business activity, the lows in stock prices have occurred five to six months before the lows in general business activity. This tendency to lead highs and lows in the economy has reflected itself at 17 of the 22 peaks and at 16 of the 23 lows.[5] It is the conformity and consistency of this leading tendency that has resulted in the inclusion of common stock prices as one of the National Bureau's leading indicators.

Now if the cyclical indicator approach to forecasting were simply a matter of observing the leading indicators, there would be no answer to the question of how to forecast stock prices. But the cyclical indicator approach is much more than just watching the leading indicators.

Full Use of Knowledge

To begin with, the fact that stock prices conform with business cycles enables us to use our full battery of knowledge concerning business cycles. The National Bureau has compiled any number of statistical facts and hypothesis about these major ups and downs in business activity. We know the months when the highs have been reached and the months when the lows have been reached; we know how long the upswings have lasted and how long the downswings have lasted; we know how far up and how far down various indicators have moved, not only during the entire upswing or downswing but after one, two, three, four, five, or more months of upswing or downswing; we know how widespread an expansion is by how many indicators are moving up in a specific month; we know when the rate of expansion or contraction is fastest and when it is slowest; we know the relation of upswings to previous downswings, that in general, the milder the contraction, the slower the rate of recovery in its early stages but the faster previous peaks are regained; we know that in some specific indicators, common stock prices, for example, the milder the contraction, the stronger the subsequent expansion; we know that the ultimate magnitude of a downswing is related to its rate of decline in its early stages; we know that the magnitude of an upswing after its first year or year and a half is related to its relative rate of climb in its early months; we know, to some extent at least, the effect of major industrial strikes in disrupting periods of expansion; we know which indicators are hit hardest in downswings and which are hit the least; we know how long it takes to regain previous peaks once an upswing has started; we know the sequence of developments characteristic of an upper and lower turning point in the direction of business activity; we know all these things and many more concerning the character and idiosyncrasies of the major ups and downs in the U. S. economy.

Against this background of knowledge we have also learned that certain statistical series or indicators have a tendency to move with characteristic timing sequences. The N.B.E.R. has been able to classify individual statistical series as to whether they have consistently reached highs or lows before, about the same time, or after the months which have been established as the months in which the overall economy can be said to have reached a high or a low. These are the by now well-known leading, coincident, and lagging indicators.

Interdependence Is Vital

This sequence simply provides a meaningful pattern into which the current movements of various business series can be placed and fruitfully studied in the light of all we know about the business cycle. To make proper use of this sequence, it is essential to grasp the inter-relationship and interdependence of the 12 "leading", the nine "coincident" and the five "lagging" indicators. The "leading" indicators do not come logically first any more than day logically precedes night. The movements of the coincident and lagging indicators are every bit as essential to the ensuing movements of the leaders as night is to the ensuing day. The continuity of time defies breaking in at any one single point to establish an exclusive starting place. Likewise, the continuity of economic developments legislates against a single starting place; they do not start with the leaders alone, the coincident alone, or the laggers alone. This interdependence is vital to the effective use of the cyclical indicator approach.

To show how this approach works let us go to actual contemporary cyclical indicator analyses as they were made and see how they handled the upward turning point in monthly stock prices in late 1960. (Frankly, this latest turning point happens to be an almost ideal working out of the indicator approach).

Our discussion deals primarily with the Dow-Jones industrials average. It is only in recent months that the N.B.E.R. has substituted the Standard and Poor's index as its leading indicator. To refresh your memory, monthly averages of the Dow-Jones industrials performed as follows:

		1960			
Jan.	656	May	616	Sept.	598
Feb.	625	June	644	Oct.	582
March	615	July	626	Nov.	601
April	620	Aug.	624	Dec.	610
		1961			
Jan.	632	Feb.	650	March	671

By May of 1960, the Dow-Jones industrials had fallen 8% from a December 1959 high. Its performance was raising questions because the economy was considered to be recovering well from the steel strike and was supposedly in excellent shape. Our own thinking in May was as follows:

"As the economy moves as far as 30 months beyond its preceding cyclical low, a considerable number of indicators show smaller percentage increases than they did at the end of 24 months. What this reflects, of course, is that the shorter upswings have come to an end and downswings have actually started.

"Note . . . . that in industrial common stock prices . . . . the percentages after 30 months are smaller than those after 24 months in three of the six periods shown; moreover, in a fourth (November 1927 to May 1930) the greater percentage shown is misleading inasmuch as it represents a temporary recovery in the intervening six months rather than a continuing cyclical upswing. . . . Thus, in a leading indicator which turns before the economy as a whole, you would expect to find it weaker at the end of 30 months (or even earlier) more often than you would the other series. This has already occurred this time; the gain in stock prices at the end of 15 months was 46.6% compared to the 37.1% gain after 24 months."

Adjusting Our Horizons

In June 1960, we had a fine example of what the statistical indicator approach cannot do; it cannot effectively anticipate temporary movements at variance with major underlying cyclical trends. Thus, we had not prepared investors for the substantial percentage rise in stock prices in late May and early June. We did, however, correctly analyze the move as temporary from a longer term cyclical viewpoint, and we said:

"The quick return of the Dow-Jones industrials to within striking distance of its 1959 high is ironic in the light of all the 'new noninflationary era' talk that has pervaded the business and financial press in recent weeks. Our own shorter-term thinking seldom speculates on 'new eras'! But we do think the recent susceptibility of the industrials to such wide swings (a 12% drop from January 5 to May 2, a 9% rise from May 2 to June 10) is strong evidence of the uncertainty of the present economic situation; and uncertainty late in a cyclical upswing does not suggest a sustained upward thrust is probable.

"We believe market planning along 1956-7 lines seems reasonable—that the return to near 1959 peaks will be followed by a subsequent resumption of a cyclical downtrend."

In the following July analysis, note that our appraisal of the leading indicators is inextricably tied in with the progress of the economic upswing as a whole.

"The most recent data show six of the eight leaders below their December 1959 levels. Yet, as in the six months ending in December 1959, some resistance to further weakness has been shown in the last month or so. Once again, then, we are faced with deciding whether a recent improvement is a temporary respite in a basic downtrend or the first stirrings of a major upward reversal. With the cyclical upswing now 27 months old, the former seems more probable.

"The movement of the coincident indicators in the first six months of 1960 have, on the whole, reflected moderate gains in the economy. . . . This lack of momentum reflects the general weakness of the leaders in the preceding months and strongly suggests a topping-out of the business upswing that began early in 1958.

"This suggests that six to nine months from now, we shall look back at a weakening in the coincident and only moderate gains in the laggers, if any.

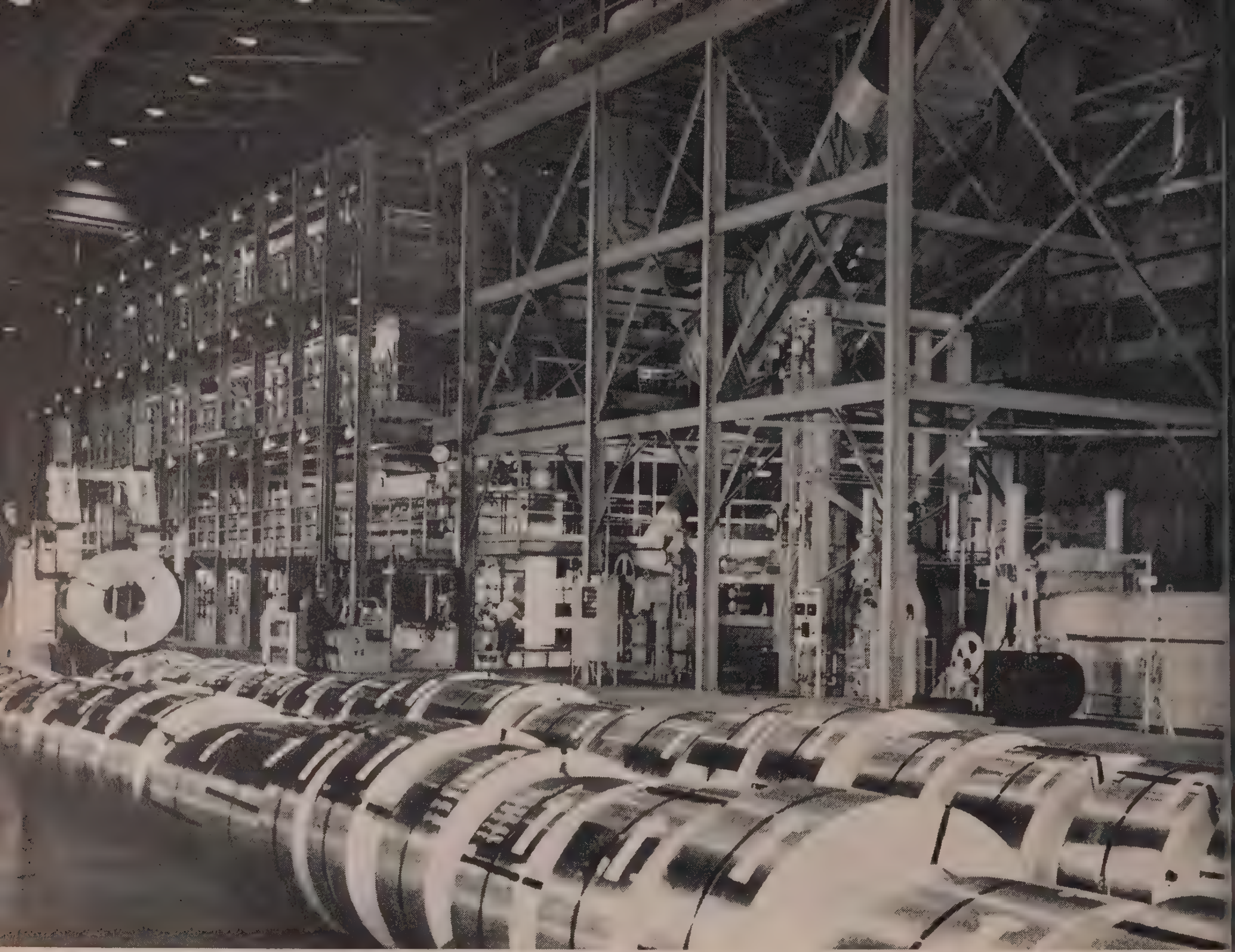
"As for the leaders, we should guess that some further general weakness is probable, for although a few leaders have occasionally turned upward before a major business downswing has even begun, the majority continue to decline through a downswing's early stages."

Looking Ahead and Behind

On August 3, 1960, we "scooped" virtually all reputable business analysts in suggesting a recession had already been underway since May.

"As a whole, the June performance of the leaders contributed little to significantly increasing or decreasing the probability of an early business downturn. As such, we believe the probability of a downswing beginning prior to the end of 1960 remains at about six chances in ten. Moreover, our July estimates of the coincident indicators introduce the possibility that a cyclical peak may already have been reached in May."

This early August "scoop" that a recession had started two months earlier requires some comment. (1). It is the type of "forecasting" performance that critical hindsighters jump on with great glee. They forget that as late as November 1960, even the Democrats were finding it extremely difficult to put across the idea that a recession was underway. (2). This supposedly belated observation had not prevented our stressing for several months that the economy was at or near a peak and production plans should be geared to caution. (3). As can be seen from the earlier comments already



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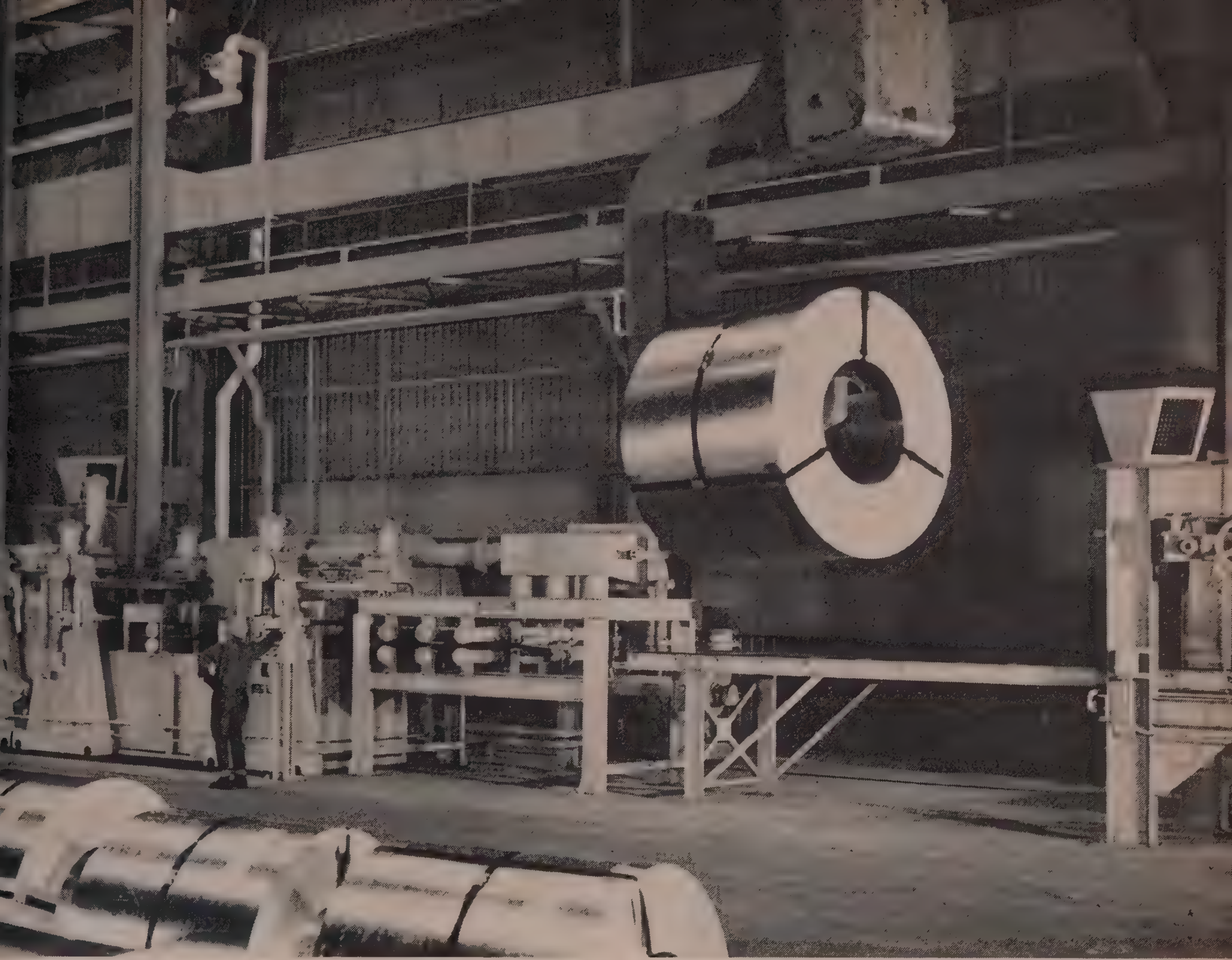

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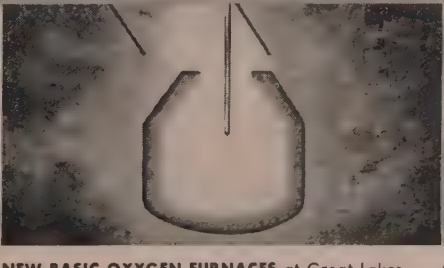

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quoted, it did not mean we had failed to anticipate stock market weakness. (4). It did anticipate seven of the nine months of recession difficulties. And coupled with the caution stressed for several months before—that a peak was imminent—this should have been unusually helpful for planning ahead.

Having suspected a business cycle downswing was underway from a study of all the N.B.E.R. indicators in the light of what we know about business cycles, we then classified the downtrend in stock prices as a cyclical decline. With this, we made the following August 1960 appraisal.

"The accompanying *Table A* provides a cyclical perspective to the recent weakness in the Dow-Jones industrial average.

Table A

Cyclical Downswings in Dow-Jones Industrials

Date of Market Peak	Months in Entire Downswing	Magnitude of Entire Downswing
Oct. 1919	22	44%
Mar. 1923	7	15
Feb. 1926	3	12
Sept. 1929	34	87
Mar. 1937	13	40
June 1948	12	13
Jan. 1953	8	9
Aug. 1956†	16	15
July 1957†	5	15
July 1959†	12	6
Dec. 1959†	7	7

Data are based on monthly averages. † See text.

"The table shows the length and magnitude of the declines in the industrials that have been related to the eight most recent major business downswings. Rather than argue about the specific beginning of the market decline relevant to the 1957-8 business downswing, we show the pertinent data based on both an August 1956 high and on a July 1957 high. Similarly, we have shown the length and the magnitude of recent weakness based on both the assumption that the decline began following the July 1959 high and on the assumption that it began following the December 1959 high.

"If we assume a July 1959 high, the current decline is 6% and has lasted 12 months. As such, it already has lasted as long or longer than five of the nine preceding declines; but its magnitude is less than all of the nine preceding declines.

"If we assume a December 1959 high, the decline is 7% and has lasted seven months. As such, it has only lasted as long or longer than three of the nine previous declines; and its magnitude is still less than all of the nine preceding declines.

"Based on the above, the decline to date has been relatively mild. The fact that it has not yet even entered the range of the magnitudes of previous declines strongly suggests it has further to go.

"The upswing preceding the current decline was one of the mildest on record; only one of the seven previous upswings was smaller. Consequently, we thing it reasonable to believe the current decline will fall within the general range of the earlier relatively mild cyclical declines. As such, an ultimate decrease of about 12.5% to a monthly average of 580-587 would seem to be a reasonable guidepost at this time. This would not preclude interim rallies nor a specific day's close as low as 560-567."

In October 1960, a further cyclical perspective was applied to common stock prices, as we showed what happens to a number of different indicators during business cycle downswings.

". . . . the inclusion of the leading indicator of industrial common stock prices is not intended to measure the magnitude of the downswing of the economy as a whole—as a leading indicator, its highs and lows may be, and usually are, several months before the reference dates shown. We have included it here because we think readers will be interested to see that in four of the five milder downswings, stock prices actually rose."

Hindsight now shows the end of the decline in Dow-Jones industrials was in October. Our early November comments at the time were as follows:

"Thus, the decline in the industrial average has now entered the range of previous cyclical downswings. A further decline to a monthly average of 565-570 and to a daily low of 545-550 would be as far as any previous moderate cyclical downswing in stock prices has gone. In other words, the bulk, if not all, of any moderate downswing in the industrials already has occurred."

Although specific mention of stock prices was not made, except to indicate that their 1961 level would exceed 1960, our December 28th comments reflect the type of cyclical indicator thinking that enables us to forecast the leading indicators.

"Our tentative conclusion that chances for a mild recession are more probable than any other alternative is now entering a test period.

"If we are to see an upturn in the economy as a whole in late Spring (say, May), the beginning of an upturn in the percentage expanding of the leaders lies immediately ahead. With the leaders now at two expanding, we should expect a rise to at least five or six expanding by April."

By January 1961, we were looking into cyclical *upswings* in stock prices.

"That developments have been so close to those anticipated is reason in itself for feeling more confident that the October low [in industrials] is a cyclical trough. This, of course, contributes to our suggesting the business downswings will reach a Spring low. The average lead of the industrials at business troughs in the past has been six months.

Table B

Cyclical Upswings in Dow-Jones Industrials

Rank	Trough	Peak	After 6 Months	Final
I	May 1926	Sept. 1929	10.7%	160.7%
II	Sept. 1953	Aug. 1956	14.1	95.4
III	Oct. 1923	Feb. 1926	4.5	80.7
IV	Oct. 1960			
V	June 1949	Jan. 1953	18.7	73.5
VI	Dec. 1957	Dec. 1959	8.0	53.5
VII	Aug. 1921	Mar. 1923	16.9	60.0
VIII	July 1932	Mar. 1937	37.0	308.6

"The accompanying *Table B* lists the eight most recent cyclical upswings in the D-J industrials monthly averages; they are ranked in the order of the severity of their preceding downswing, the downswing preceding May 1926 being the mildest (I), the downswing preceding July 1932 being the most severe (VIII). The decline preceding October 1960 is ranked IV.

"In so doing, we are pursuing the more general N.B.E.R. hypothesis that the magnitude of a business upswing in its early stages is positively correlated with the magnitude of the preceding contraction. Although it is not obvious, there appears to be some such tendency after the first six months of upswing. As for the ultimate magnitude, with the obvious exception of July 1932-March 1937, the tendency appears reversed.

"Within this perspective, a 10% rise to a monthly average of at least 640 by April seems a reasonable guide post. . . . This does not preclude interim declines nor a specific day's close as high as 660."

In February, business sentiment was becoming more and more discouraged and the rise in the market was being looked at questioningly. Our analysis was as follows:

"As the recession deepens and business sentiment grows blacker—if not in the stock market, in the new administration and among businessmen generally—there is a tendency for more and more worried individuals to turn to the leaders for a sign of an upturn. Despair has increased as they have failed to find any real strength. They overlook the fact that the leaders have such short leads at business cycle lows.

"Inverted failure liabilities, for which we have a January guesstimate, calls for an October 1960 low and should show three months of improvement by now; actually, [it] has been improving for seven months. Common stock prices for which we have January data, calls for a December 1960 low and should show one month of improvement by now; actually, it . . . . has been improving for three months.

"Once past these two indicators, the expected lows and the available data are such as to preclude seeing any improvement in any of the remaining leaders. New orders, for example, calls for a low in March 1961 and would not be expected to show an improvement until April 1961; at the moment, we have December data only. In other words, even if a general business low lies only four months away in May, no real strength should be expected from the data now available for the leaders.

"What can we look for then? (1). The performance of at least the first two leaders listed is on the plus side. (2). We would not expect the average leads to prevail in all the leaders and would thus expect at least some improvement in others even if any real strength is lacking; basic commodity prices and nonresidential contract awards seem to fit this criterion. (3). We can look to those laggers which reflect maladjustments and see if they are being corrected: inventory correction seems to be progressing favorably; the excessive instalment credit rise is tapering off; and business loan interest rates have had a partial correction; (4). We can continue to compare the progressive changes in the leaders and coincident to earlier recessions and gauge relative severities; at the moment, movements in the recession thus far compare favorably to those in the mild recession.

"None of these observations guarantee a mild recession, but on the whole they suggest a late Spring end to the present downswing is the most probable possibility."

Our February 22, 1961 issue shows fairly clearly that some very intelligent noises can be made about the stock market through proper use of the cyclical indicator approach.

"The stock market is not a key to the future in and of itself. It has consistently gone up prior to business recoveries but it has also gone up prematurely and subsequently receded to even lower levels before really moving cyclically upward. False optimism may start the market up but it takes a sustained business recovery to keep it up. A fairly recent example was the sharp rise in prices in the first half of 1957, which proved to be abortive when the economy slumped into a last half of 1957 recession. Is recent strength in the market comparable to that prior to mid-1957? In answering the question, it is essential to review the overall economy. . . . For this is not a question of stock market conditions alone but one of where the economy currently is with respect to the business cycle.

"Current movements of the leaders actually are somewhat similar to those at mid-1957."

The Real Differences

"The real differences are in the coincident and laggers. Without going into indicator by indicator detail, today's situation is one of obvious downtrends in the coincident and in most of the laggers; at mid-1957, little more than a hesitancy was noted in the coincident, and the laggers, for the most part, were continuing blithely upward.

"Thus, apart from a superficial similarity in the leaders, we have a vastly different situation today than at mid-1957. Then, the economy was simply on the threshold of trouble; today, we have stepped well over the threshold and are firmly encompassed by the troubles themselves.

"A more logical comparison would be of today's conditions with those at the end of 1957, when the economy had similarly experienced several months of cyclical contraction. What do we find in such a comparison?

"On the whole, the leaders look a bit better now than then.

"Among the coincident indicators . . . . the recession has proceeded at much the same pace as in the last half of 1957; if anything it has been milder.

"As a whole, the laggers would seem to be progressing more favorably currently than at the end of 1957.

"Within the framework of a growing economy, the similarity of the end of 1960 to the end of 1957 suggests an upturn may lie only a few more months ahead of us. . . . Where the two situations (today and end-of-1957) differ, the differences seem to be on the side of a milder end to this contraction than to the 1957-58 contraction. These differences include somewhat greater strength among the leaders, somewhat milder weaknesses in the coincident to date, and somewhat greater corrections in those laggers which reflect maladjustments in the economy."

By the end of March 1961, we were showing what a recovery looked like in terms of all 26 indicators based on percentage changes in those indicators in previous recoveries. In May, having decided from study of all 26 indicators that a business recovery was fairly definitely under way, we turned to a more specific cyclical recovery analysis of the stock market. (At this point, we were discussing the Standard and Poor's 500 common stock index on a 100 base rather than 10).

"In the accompanying *Table C,* we first show several measurements relevant to the cyclical expansions in common stock prices since 1920. The Great Depression was considered a unique experience and has not been included. Column 1 lists the dates of the cyclical lows in the overall economy to which the stock price data pertain. Column 2 shows the ultimate magnitude of the expansions in stock prices relevant to the business recoveries that began from the lows noted in column 1. Column 3 shows the declines in stock prices which preceded the increases shown in column 2. Column 4 shows the increases in stock prices prior to the business lows noted in column 1. (At all but the July 1921 business low, stock prices began to improve two to eleven months before overall business.) Column 5 shows the increase in stock prices for the first six months of their expansion. Column 6 shows the ultimate length of the stock price expansions.

Table C

Cyclical Characteristics of Common Stock Prices
(Standard and Poor's)

(1) Business Low	(2) Ultimate Rise	(3) Prior Decline	(4) Rise Prior to Law	(5) 6-Month Rise	(6) Ultimate Length
June '38	32%	−44%	+ 4%	+29%	18 mos.
July '21	46	−32	—	+16	19 "
Apr. '58	48	−17	+ 5	+11	19 "
Oct. '49	77	−17	+14	+18	45 "
Aug. '54	99	−10	+32	+14	34 "
July '24	249	−15	+12	+ 6	71 "
Mar. '61		−10	+19	+23	

Business Low	Ultimate Rise	Prior Decline	Rise Prior to Law	6-Month Rise	Ultimate Length
June '38	I	I	II	VI	I
July '21	II	II	I	IV	II-III
Apr. '58	III	III	III	II	II-III
Oct. '49	IV	IV	V	V	V
Aug. '54	V	VI	VI	III	IV
July '24	VI	V	IV	I	VI
Mar. '61		(V-VI)	(V-VI)	(V-VI)	

"To simplify comparisons of the data, ranks were assigned; the smallest figure was given a rank of I, the largest figure was given a rank of VI. Thus, in column 2, the stock price expansion relevant to the business recovery beginning from June 1938 was the smallest of the six and ranked I; that relevant to the business recovery beginning from July 1924 was the largest and ranked VI.

"These data and rankings are the basis for the following four generalizations.

"1. The milder the preceding cyclical decline in stock prices, the larger and longer the subsequent cyclical expansion in stock prices. (Column 3 compared to columns 2 and 6.)

"2. The larger the rise in stock prices prior to the beginning of a recovery in the economy as a whole, the larger and longer the subsequent cyclical expansion in stock prices. (Column 4 compared to columns 2 and 6.)

"3. The magnitude of the rise in stock prices in the first six months of an expansion and the ultimate length or magnitude of the rise are not related. (Column 5 compared to column 2.)

"4. Although stock prices typically move upward prior to an uptrend in general business, it is also true that the major portion of a cyclical rise in stock prices occurs after the business low has been reached. (Column 4 compared to column 2.)"

These four generalizations were the basis for the following four contemporary observations and conclusions.

"1. The cyclical decline in stock prices which preceded the current recovery in stock prices was among the mildest since 1920 (see column 3). This augurs a relatively long and relatively large ultimate rise.

"2. The rise in stock prices prior to March 1961 (which we have assumed was a business low) was among the largest since 1920 (see column 4). This augurs a relatively long and relatively large ultimate rise.

"3. The relatively large rise in stock prices in the six months from October 1960 through April 1961 (see column 5) is of no consequence in ascertaining the length or magnitude of the market's ultimate rise. However, by rising so fast so quickly, it suggests the subsequent rise will be a bit less than it would otherwise be.

"4. The characteristic of stock prices to make their major move after a business low has been reached suggests the market uptrend has a good deal further to go.

"In summary, a generally rising market for another year to a level in the high 700's is well within the cyclical experience characteristic of the non-depression years of the last four decades."

SIGNIFICANCE OF THE INDICATORS

That the cyclical indicator approach is not one of sporadically looking at the leading indicators to see what lies ahead is clear from the extensive analyses we have quoted. It is a continuing every day job of fitting contradictory and complementary developments in all 26 indicators into a business cycle framework; it requires an intimate knowledge of the individual leading, coincident, and lagging indicators, their magnitude and timing interrelationships, and a broad knowledge of all that has been learned about the business cycle. That the cyclical indicator approach can be helpful in appraising current movements and forecasting future movements of broad aggregates of stock prices as those movements pertain to major cyclical movements of the economy as a whole is also apparent from the recital of analyses and forecasts described in this article. Equally apparent, I hope, is the fact that what is involved here is continuing interpretation of all that is going on, not some simple mechanical manipulation of statistics labeled leading indicators.

In conclusion, I shall repeat the comment early in this article that "this latest turning point happens to be an almost ideal working out of the indicator approach." But let me point out that if the cyclical indicator approach did no better than tell you simultaneously when general business activity reached a low, that is, if it had no lead whatsoever over business, let alone the stock market, it would still have *anticipated* the following portions of the seven most recent cyclical upswings in the *leading* indicator of common stock prices.

Upswing Forecast As Of	Portion of Market Rise Anticipated
July 1921	97.2%
July 1924	95.2
Mar. 1933	90.4
June 1938	87.5
Oct. 1949	81.8
Aug. 1954	67.7
Apr. 1958	89.6

A similar set of simultaneous recognitions of business peaks would have anticipated the following portions of market declines.

Downswing Forecast As Of	Portion of Market Decline Anticipated
Jan. 1920	77.7%
May 1923	46.2
Oct. 1926	*
Aug. 1929	96.3
May 1937	77.7
Nov. 1948	46.3
July 1953	35.1
July 1957	96.8
May 1960	25.0

*This is one of the few times when a decline in the market corresponding to a decline in business activity did not occur; the market continued up through the October 1926 - November 1927 recession.

All of which gets us back to the original question, "What good are the leading indicators for forecasting the stock market, when stock prices themselves are one of the leading indicators?" The answer is, "By themselves, 'no good,' for the leading indicators are not an entity in and of themselves; they are simply a small part of a larger body of knowledge pertinent to the phenomenon of major ups and downs in the economy. It is this entire body of cyclical knowledge, of which the leading indicators are only a part, that enables users of the cyclical indicator approach to do any forecasting at all, let alone forecasting stock prices.

Footnotes

1. The National Bureau of Economic Research, Inc., (261 Madison Avenue, N. Y.) has made an intensive study to discover indicators that best conform to the major ups and downs in business in the United States. A report of the Bureau's work and findings may be found in its publication, Business Cycle Indicators by Geoffrey H. Moore.

The 26 indicators currently believed to be most representative of business cycle movements were broken down into three major groups. The first group includes 12 indicators that consistently moved up and down prior to general business. The second group includes 9 indicators that consistently moved up and down at about the same time as most business. The third group includes 5 indicators that moved up and down after overall business. These three groups are designated leading, roughly coincident, and lagging respectively.

The current list, data for which appear weekly in the Statistical Indicator, includes: average hours worked, accession rate, lay-off rate, durable goods orders, housing starts, commercial and industrial building awards, net new businesses, failure liabilities, after-tax corporate profits, common stock prices (Standard and Poor's 500-stock index), inventory change and prices of industrial raw materials among the leaders; nonagricultural employment, the unemployment rate, industrial production, GNP in current dollars, GNP in 1954 dollars, bank debits outside N. Y. C., personal income, retail sales and nonfood wholesale prices among the coincident; and plant and equipment expenditures, unit labor cost, manufacturing inventories, installment credit, and bank rates among the laggers.

2. Wesley C. Mitchell, What Happens During Business Cycles, N.B.E.R., 1951, New York City, p. 6.

3. See Geoffrey H. Moore, Occasional Paper No. 61, Measuring Recessions, N.B.E.R., New York, 1958, p. 260.

4. Geoffrey H. Moore, Editor, Business Cycle Indicators, N.B.E.R., Princeton University Press, Princeton, N. J., 1961, p. 673-9. One peak and one low has occurred since publication.

5. Ibid, p. 679. For further information see Mennis, Edmund A., Security Prices and Business Cycles, The Analysts Journal, February 1955.

INTERNATIONAL HARVESTER COMPANY

The Directors of International Harvester Company have declared quarterly dividend No. 172 of one dollar and seventy-five cents ($1.75) per share on the preferred stock, payable Sept. 1, 1961, to stockholders of record at the close of business on August 4, 1961.

GERARD J. EGER, Secretary

ALLEGHENY LUDLUM STEEL CORPORATION

PITTSBURGH, PENNA.

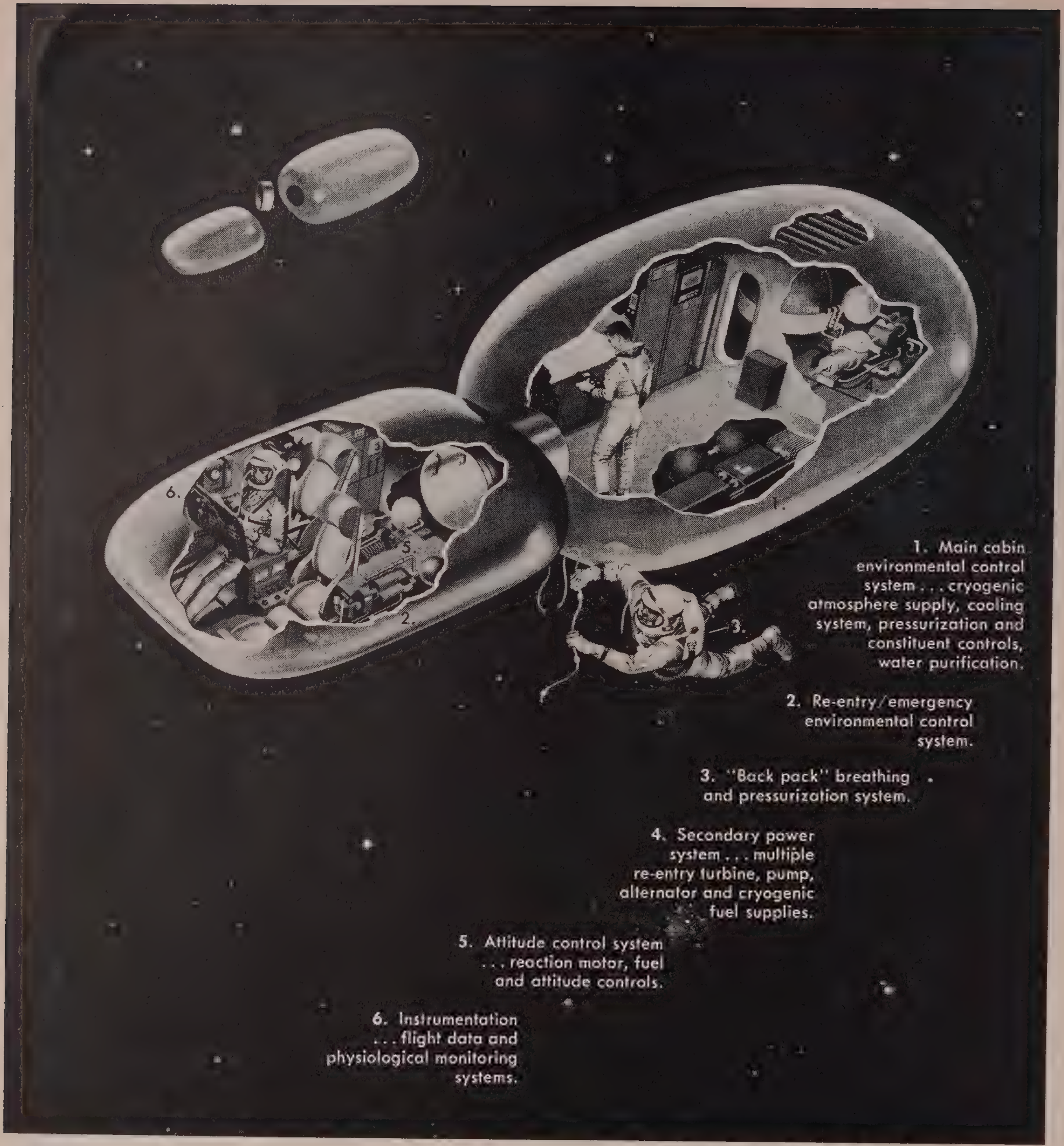
At a meeting of the Board of Directors of Allegheny Ludlum Steel Corporation held today, August 18, 1961, a dividend of fifty cents (50c) per share was declared on the Common Stock of the Corporation, payable September 30, 1961, to shareowners of record at the close of business on September 8, 1961.

S. A. McCASKEY, JR.
Secretary

INTERNATIONAL HARVESTER COMPANY

The Directors of International Harvester Company have declared quarterly dividend No. 186 of sixty cents (60¢) per share on the common stock, payable October 16, 1961, to stockholders of record at the close of business on September 15, 1961.

GERARD J. EGER, Secretary



1. Main cabin environmental control system . . . cryogenic atmosphere supply, cooling system, pressurization and constituent controls, water purification.

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EVOLUTION OF THE DOW THEORY

by George W. Bishop, Jr.

THE DOW THEORY as known and discussed in financial circles today is actually the result of an evolutionary process. Mythology holds that Minerva sprang forth from the head of Jupiter completely armed. However, the Dow Theory did not spring from the brain of Charles H. Dow into full-fledged existence, but experienced a gradual evolution. This, no doubt, resulted from a combination of many events. The first of these was, of course, the contributions of Charles H. Dow to stock market theory.

Actually Dow was one of the foremost financial journalists of his time.[1] He was born in Sterling, Connecticut, on November 6, 1851. His father, Charles Dow, was a farmer who inherited the homestead in Sterling where he had been born in 1816. The family traced their ancestry to Henry Dow who arrived in Boston in 1637. After a series of moves Dow's ancestors settled in Sterling between 1790 and 1810. Dow's father died when he was six years old, leaving the farm to the widowed mother. Little is known of Dow's early life and nothing of his schooling. He left the farm at an early age and turned his hand to several kinds of work.[2]

Dow embarked upon his newspaper career in 1872 when he joined the staff of The Springfield Republican. This was, at the time, a newspaper of national repute under the editorship of Samuel Bowles, one of the newspaper giants of all time. In 1875 Dow left as a trained newspaperman for Providence, Rhode Island, where he first served on the staff of The Providence Star, and then for three years, 1877 through 1879, on The Providence Journal. Like The Springfield Republican, The Providence Journal was a first-class newspaper. While with the Journal Dow wrote several articles which established his reputation as an historian of the local scene. Two of these, later published in pamphlet form, attracted considerable attention.[3] In the summer of 1879 he wrote a series of articles that appeared in The Providence Journal and in which he described his visit to Leadville, Colorado, when the silver boom was at its height. Dow accompanied a group of prominent mining experts and financiers on a visit to the "Magic City" as Leadville called itself with justification.[4]

Dow moved to New York City in 1880 and turned to financial journalism. With a fellow worker at a Wall Street news agency he founded Dow Jones & Company in November, 1882. He became a member of the New York Stock Exchange on December 24, 1885, and remained a member until April 30, 1891. During this time he continued with Dow Jones & Company and became the first editor of The Wall Street Journal which was initially published July 8, 1889 and has been an integral part of the financial scene ever since.

Dow's work on The Wall Street Journal firmly established his reputation as a financial journalist. His many paragraphs appeared in this newspaper from the date of its first publication until shortly before his death on December 4, 1902. He is generally given credit for compiling the first average of stock prices in 1884. In conformity with prevailing newspaper practice, Dow did not identify his writings. As a result, the problem of identification of Dow's editorials in The Wall Street Journal is a difficult one. However, it is possible to establish the identity of his writings for the period April 21, 1899 to October 25, 1902, inclusive.

Gingold Remembers

Dow's service as editor of The Wall Street Journal embraced a 13-year period (1889-1902), and it seems reasonable to assume that he wrote many articles over the years. As editor he was, of course, responsible for the contents of the paper *in toto*. Thomas F. Woodlock states that Dow wrote the "Review and Outlook" column in The Wall Street Journal and places among his last articles those editorials dealing with the anthracite coal strike which appeared in the latter part of October, 1902.[5] Oliver J. Gingold who has been with The Wall Street Journal for 61 years confirms that Dow wrote the "Review and Outlook" column.[6] This column made its initial appearance on April 21, 1899. All of Dow's work quoted by S. A. Nelson and William Peter Hamilton is found in this column.

Hamilton places the dates of Dow's editorials on "the substance of his theory" between June, 1900 and July, 1902.[7] S. A. Nelson compiled his chapters designated as "Dow's Theory" from the editorials of Dow dated from December 14, 1900, until July 31, 1902. Hence, it can be assumed that Dow wrote the "Review and Outlook" column from the time of its inauguration, April 21, 1899, until October 25, 1902, the date of the last coal strike editorial.

There is very strong possibility that Charles H. Dow did not formulate a stock market "theory" as such. Although Dow's editorials embraced many subjects, investment and stock market speculation were prominent among them. His editorials on the business cycle Professor Giulio Pontecorvo finds "reminiscent of the descriptions of the cumulative movements in business

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[1] Footnotes appear at end of article.

A native New Yorker, Dr. George W. Bishop, Jr., received his A.B. at the College of William and Mary, and both his M.B.A. and Ph.D. from New York University. He is the author of Charles H. Dow and the Dow Theory, and his articles have appeared in The Wall Street Journal, The Business History Review, Tennessee Business and other publications. Dr. Bishop is associate professor of finance at the University of Tennessee.

activity found in Mitchell."[8] The author has likewise noted Dow's methodological treatment as similar to that later employed by Wesley C. Mitchell, particularly in Dow's editorial of May 26, 1900, when he compares bank clearings, stock averages, customs revenues, internal revenues, net earnings of national banks, prices of pig iron, bar iron, bituminous coal, anthracite coal, and railroad earnings and dividends to illustrate periods of alternate expansion and contraction from 1873 to 1899.[9]

Professor Sidney Cottle likens Dow's approach to common stock investing "not too far from the approach proposed in Graham and Dodd, Security Analysis," with the exception that "Dow apparently would base value in part on anticipated short-run earnings rather than on 'average future earnings'."[10]

Dow Becomes an Authority

Professor Thomas S. Berry notes that Dow's "oft-reiterated theme of 'action and reaction' reminds one not only of Taussig's penumbra theory of short term market experience but also of the cobweb theorem which came out some years later."[11]

It is, of course, impossible to learn to what extent Dow's readers looked upon his editorials as setting forth a stock market theory. Many of the editorials were along the lines of what today is classified as financial analysis. Other editorials treated banking, corporate finance, labor policies, politics and other subjects. The editorials were almost a daily feature of The Wall Street Journal, and no doubt greater emphasis was placed upon certain editorials by some readers who, in turn, gave less attention to others (human nature ceasing to change). Those editorials which contained suggested methods of stock market trading probably acquired a following. Those which discussed domestic and international banking, labor policies, and aspects of economic theory probably held limited appeal for the general reader. However, there is no doubt that Charles H. Dow became known as a stock market authority. At the turn of the century, shortly before his death, he wrote a series of articles primarily concerned with stock market trading and investment.[12] A number of these were collected in book form and became the base of the Dow Theory.

In the year 1902, Samuel Armstrong Nelson, of the financial staff of The [New York] Sun, added the ABC of Stock Speculation as Volume V in Nelson's Wall Street Library, a series of books concerned with the Stock Exchange, banking, and money market subjects. He had endeavored to have Dow write the book but his efforts were unavailing. As a result he undertook the book himself, using selected editorials written by Dow, and previously published in The Wall Street Journal, as the basic framework for the book. Of the 35 chapters that comprise The ABC of Stock Speculation 17 consist of editorials written by Dow, and 15 of these chapters were designated by a footnote as "Dow's Theory." Evidently, this was the first use of the term in print.

The 15 chapters labeled as "Dow's Theory" contained 16 of Dow's editorials since two editorials were combined to form one chapter. As previously noted these editorials were originally published in The Wall Street Journal during the period December 14, 1900 to July 31, 1902. Dow wrote many other articles on the stock market during this period so Nelson must have used some criterion in order to select 16 of them as "Dow's theory." It has not been possible to ascertain what standard of judgment Nelson used. The thought that Dow may have made the selection is an intriguing one, *but* there is no evidence to indicate that he did so.

Nelson First 'Dow Theorist'

In this manner S. A. Nelson first named the theory, and was the first "Dow Theorist" in print. However, Nelson cannot be classified as an exponent of the Dow Theory—other than for his role in the selection of Dow's editorials—since he did not add by way of interpretation to the words of Dow.

In the editorials selected by S. A. Nelson we find a set of principles which could be utilized by investors and speculators engaged in investing and trading in common stocks. Although many other principles were established the following precepts comprise the main standards:

1. Sound trading practice includes the observation of the maximum—"Cut your losses short, but let your profits run."
2. There are two general methods of trading in stocks. One entails trading in relatively large amounts coupled with the use of stop orders; the other consists of buying on a scale down.
3. The stock trader should avoid overtrading.
4. There are three movements in the market all going on at the same time. These consist of the daily fluctuation, the short swing ranging from 10 to 60 days, and the main movement covering at least four years in duration.
5. The stock trader should have an idea of the value of the stock in which he trades. Value is largely determined by earnings available for dividend payment.
6. The law of action and reaction consists of the rule that a primary movement in the market will have a secondary movement in the opposite direction of at least three-eighths of the primary movement. The same rule applies to movements in individual stocks.
7. Stop orders are a speculative aid in stock trading under certain circumstances.
8. The stock trader should ascertain whether a bull or bear market is underway. Trading in a bull market should be confined to the long side, and in a bear market to the short side.

With the passage of time The ABC of Stock Speculation went out of print. It was republished at a much later date, but for a number of years was available only on a limited basis in libraries and second hand bookstores. Naturally, under these conditions Dow's editorials were not widely read, although the name of Dow, and the Dow Theory, appeared in the literature of the stock market. Many authors, however, referred only to Dow's compilation of the first stock market average and his classification of the three movements in the market.

Thomas F. Woodlock succeeded Charles H. Dow as editor of The Wall Street Journal, serving in this capacity for almost three years after Dow's death. Specializing in railroad finance, Woodlock was the author of The Anatomy of a Railroad Report (1895) and Ton Mile Cost (1899). He was considered an excellent student of financial affairs and later in his career (1925-1930) served on the Interstate Commerce Commission.

Hamilton Interprets 'Dow Theory'

Following Woodlock as editor of The Wall Street Journal was Sereno Stansbury Pratt, an experienced newspaper correspondent and editor, and likewise a student of note. He was the author of The Work of Wall Street, first published in 1903, and considered one of the better descriptions of the operations of the New York money market.

Both of Dow's successors were able financial newspapermen, but neither became what could be called an exponent of the Dow Theory. This was left to a Scottish journalist, William Peter Hamilton, who followed Pratt as editor serving in this capacity from January, 1908, until his death on December 9, 1929. He presented his version of the theory not only in The Wall Street Journal but in Barron's and in a book, The Stock Market Barometer, published in 1922. From that time until his death, Hamilton was looked upon as the leading exponent of the Dow Theory.

William Peter Hamilton was born in Great Britain in 1867. As a young man he worked as a clerk on the London Stock Exchange, and begun his newspaper career in London with the Pall Mall Gazette. He later worked as a foreign correspondent, and came to the United States in 1899 to join the staff of The Wall Street Journal. There is *no* proof that Hamilton was ever a close associate of Dow, as many writers hold, but rather the evidence points to the fact that their relationship was that of employer and employee, or editor and reporter.

The Hamilton version of the Dow Theory is the familiar "Dow Theory" as known and discussed in financial circles today. In short Hamilton presents a syllogism in that prices on the Stock Exchange take account of all known facts and discount business conditions. The Dow-Jones averages are representative of Stock Exchange prices. Hence, the Dow-Jones averages discount business conditions. Hamilton also stressed the "confirmation of the averages" and the action of a "line formation" in the averages. It is important to note the transition from the financial analysis and trading approach of Charles H. Dow to the "averages as sufficient in themselves" approach of William Peter Hamilton.

Shortly before his death, Hamilton penned the famous "A Turn in the Tide" editorial, which appeared in The Wall Street Journal on October 25, 1929, and in which he advised his readers that the great bull market was over. It is interesting to note that he had previously predicted a bear market in 1926.[13] This prediction, of course, turned out to be in error.

After Hamilton's death no advocate of the Dow Theory came forward to command recognition until Robert Rhea published a series of articles in Barron's in 1932. Rhea then published in the same year, The Dow Theory, which canonized Hamilton and firmly established the Hamilton version of The Dow Theory as standard. This volume, with its keen analysis of Hamilton's editorials, did much to revive an interest in the theory which suffered an almost fatal thrust by the general disillusionment that accompanied the deflation of the bull market in the years 1929-1932.

Robert Rhea was born on October 26, 1886 at Nashville, Tennessee, and attended public and private schools in Nashville. He was a student at both Lehigh and Vanderbilt Universities, where he studied engineering, but did not receive a degree from either institution. He served in the aviation branch of the Signal Corps, U. S. Army, in World War I, and was injured in an accident which permanently disabled him. He received a medical discharge and was an invalid from 1918 until his death in 1939.

Rhea Adds Weight to 'Theory'

Rhea wrote a series of letters entitled Dow Theory Comment in which he traced the performance of the Dow-Jones industrial and railroad averages and discussed the implications of the various movements with respect to the primary and secondary trends of the market. It was reported that 6,000 individual subscribers received the Dow Theory Comment letters.

Rhea was also the author of Dow's Theory Applied to Business and Banking (1938) and The Story of the Averages (mimeograph—1934.) He died in Kansas City, Missouri, on November 6, 1939.

From 1932 until his death, Rhea was looked upon as the leading exponent of the Dow Theory and there is no doubt that he did much to popularize and publicize it. Garfield A. Drew, in New Methods for Profit in the Stock Market, states that largely because of Rhea's activities there were 10 persons who knew the Dow Theory existed in 1948 for every one aware of this fact in 1929.[14]

The Dow Theory is in effect a manual, or rather a compendium, in which Rhea compares quoted portions of Hamilton's editorials, or passages from The Stock Market Barometer, with the various tenets of the Dow Theory. Rhea's original contributions are at a minimum, but they are very effective when they appear. His great contribution to the Dow Theory is the manner in which he sets forth the tenets in a single listing and clearly defines each concept. His primary achievement is one of classification. There is no doubt that he performed his declared task, that of formulating the Dow Theory through a study of the writings of Hamilton, in a competent manner. As for the work of Charles H. Dow, Rhea was not really familiar with it, and he made no pretense to the contrary.

Any attempt to fuse the writings of Dow and those of Hamilton and Rhea into a concordant theory presents many difficulties. It must be remembered that Dow was a journalist writing timely articles on matters that were of current interest to his readers. Like other financial journalists, he viewed and interpreted the economic scene as it unfolded. This entailed the treatment of many subjects of varied nature on a daily basis in his editorial column, and not the systematic presentation of a theory as such. Hamilton, however, in The Stock Market Barometer, and Rhea, in The Dow Theory, did present definitive studies of the Dow Theory.

DOW THEORY IN FOUR STEPS

It seems appropriate to describe the evolution of the Dow Theory as consisting of four steps. *First,* the original editorials of Charles H. Dow to the extent that his readers looked upon his writings as a stock market theory. *Second,* the compilation by Nelson of Dow's editorials in book form in The ABC of Stock Speculation, since this narrowed the scope of "Dow's Theory", gave it a name, and gave it permanence. *Third,* Hamilton's innovations with respect to the confirmation of the railroad and industrial averages, and the self-sufficiency of the Dow-Jones averages which are of great importance to the present-day theory. *Fourth,* Rhea's action of accepting Hamilton and not Dow as the master by which he promulgated the Hamilton version of the Dow Theory. In addition, he placed the tenets of the theory in definitive form.

Dow's thought remains as the foundation of what is still the best known theory of stock market investment. However, it must be recognized that Hamilton and Rhea added features that are by no means unimportant. It is apparent that the present-day Dow Theory represents a synthesis of the thought of Dow, Hamilton, and Rhea.

FOOTNOTES

1. For accounts of Dow's newspaper career see George W. Bishop, Jr., Charles H. Dow and the Dow Theory (New York, 1960), pp. 1-44; George W. Bishop, Jr., "New England Journalist", The Business History Review, Volume XXXIV (Spring 1960), pp. 77-93.

2. For information on Dow's genealogy see Robert Piercy Dow (compiler), The Book of Dow (Rutland, Vt., 1929), passim.

3. History of Steam Navigation between New York and Providence (New York, 1877). Republished in 1942 by the Steamship Historical Society of America, Peabody Museum, Salem, Mass., as the second publication of its Reprint Series. Newport: The City by the Sea (Newport, R. I., 1880).

4. Dow's "Leadville Letters" are reprinted in full in Bishop, op. cit., pp. 248-354.

5. The Wall Street Journal, June 27, 1932.

6. Oliver J. Gingold, "My First 50 Years in Wall Street." The Exchange, Volume XII (April, 1951), p. 6.

7. William Peter Hamilton, The Stock Market Barometer (New York, 1922), pp. 42-43.

8. The Business History Review, Volume XXXV (Spring 1961), p. 130.

9. Bishop, op. cit., pp. 97-98 and The Business History Review, Volume XXXIV (Spring 1960), p. 91.

10. The Journal of Finance, Volume XV (December, 1960), pp. 596-597.

11. The Journal of Economic History, Volume XXI (March, 1961), p. 89.

12. Dow's editorial of December 14, 1900 announced that methods of stock market trading and investment would be made the subject of future articles.

13. The Wall Street Journal, March 8, 1926.

14. Rhea's influence is further substantiated by the fact that R. W. Schabacker's Stock Market Theory and Practice, published in 1930, does not mention the Dow Theory, but his sequel in 1934, Stock Market Profits, has an extended discussion of the Dow Theory and refers to Rhea as the "best known contemporary interpreter" and to "Mr. Rhea's capable volume."

Harbison-Walker Refractories Company

Board of Directors has declared for quarter ending September 30, 1961 DIVIDEND of ONE and ONE-HALF (1½%) PER CENT or $1.50 per share on PREFERRED STOCK, payable October 20, 1961 to shareholders of record October 6, 1961.

Also declared a DIVIDEND of $.45 per share on COMMON STOCK, payable September 1, 1961 to shareholders of record August 11, 1961.

Thomas Welfer
Secretary

Pittsburgh, July 27, 1961

GOULD NATIONAL GN BATTERIES INC

GOULD-NATIONAL BATTERIES, INC.

Manufacturers of a complete line of automotive, industrial and military storage batteries plus motive specialties.

A REGULAR QUARTERLY DIVIDEND of 30c per share on Common Stock, was declared by the Board of Directors on July 11, 1961 payable Sept. 15, 1961 to stockholders of record on Sept. 1, 1961.

This is our 119th Common Dividend.

A. H. DAGGETT
Chairman

ST. PAUL 1, MINNESOTA

AMAX

American Metal Climax, Inc.

COMMON STOCK
Dividend No. 143

The Board of Directors has declared a dividend of Thirty-five Cents (35¢) per share on the Common Stock payable September 1, 1961 to stockholders of record at the close of business on August 22, 1961.

D. J. DONAHUE,
Treasurer

To handle vital information processing . . .

NASA chooses Western Union-engineered system for world-wide satellite tracking stations and computer center

Flexible network now speeds launching and tracking data, administrative messages and computations in seconds (and in writing) to NASA brain-center in U.S.A.

The world over, National Aeronautics and Space Administration Minitrack Stations remain operational around the clock. Their mission: to pick up satellite tracking intelligence and transmit it instantaneously to NASA's Goddard Space Flight Center in Maryland.

Now, every NASA Minitrack Station can transmit direct to the Maryland Center—or use this point as a relay for messages between individual stations. Equally important: Maryland can send launching and tracking intelligence simultaneously to NASA installations around the globe.

"Conference Circuits" are another unique feature of this system. With push-button ease and speed, Minitrack Stations on opposite sides of the world can now "talk" to each other in writing.

Every NASA message is automatically numbered before transmission. No chance of loss or error. And monitoring equipment assures continuous maintenance of all circuits.

Where fast, modern communications are needed to speed information without delay, without error, without fail . . . new Western Union systems are meeting the challenge.

More ways Western Union-engineered systems are bolstering National Defense

Comlognet (Combat Logistics Network). To be used to control the flow of men and materials between more than 240 Air Force installations. National operation of the world's most advanced data communications system scheduled during 1962.

Air Force Automatic Teleprinter System. New Western Union switching centers and terminal equipment are part of the 5½ million-mile network, linking over 350 Air Force installations around the world. Minimum daily capacity: 130 million words.

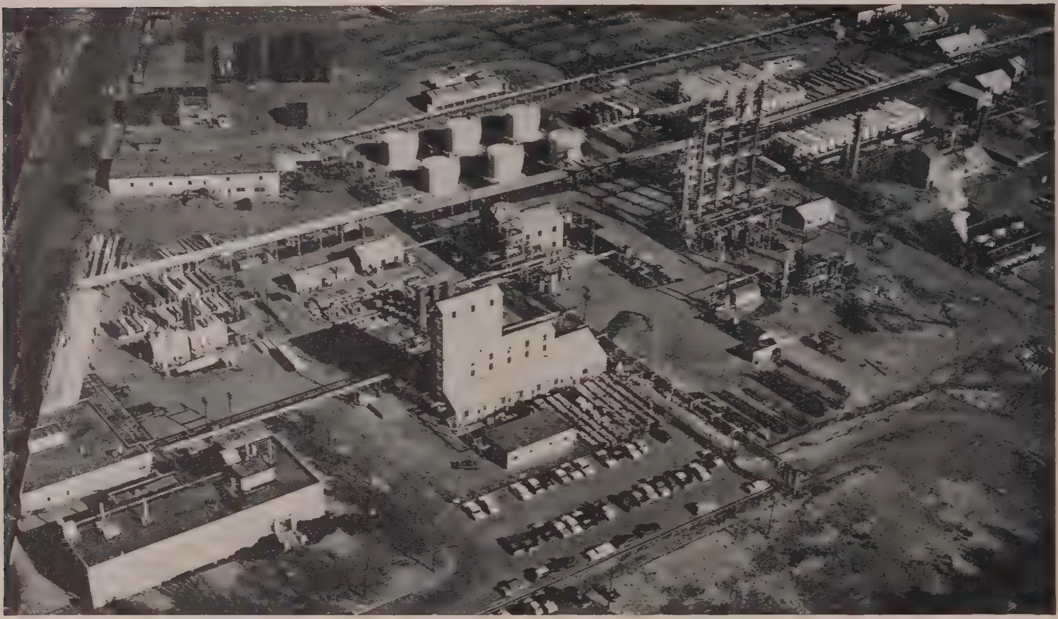
National Weather Facsimile Network. Now providing data to 600 stations in 330 cities, serving: U. S. Weather Bureau, Air Force, Army, Navy, Coast Guard, commercial airlines, other nonmilitary subscribers.

Coast-to-Coast Microwave Network. Designed for both military and civilian use. Will handle every known form of electronic communication. Now under construction.

Western Union . . . finds better ways to speed it electronically

Looking Ahead With Phillips Petroleum...

Where "Tremendous Trifles" Aid Profits and Progress



Philtex Plant at Borger, Texas, where most of Phillips "tremendous trifles" are manufactured, packaged, and shipped. Close by are other Phillips plants making the choice raw materials needed for these high-value specialty chemicals.

Phillips Petroleum Company, backed by aggressive research, is widely known for its leading roles in petroleum, natural gas liquids and major petrochemicals. Not as well known—but of significant value—is Phillips output of a group of products which we call "tremendous trifles."

The term embraces many very specialized chemical products that while small in volume are large in value. Some sell for more than $100 a pound and many are in the $10 a pound or higher class. They come individually packaged in quantities ranging from portable cylinders down to vials containing just a few grams.

Some are known only by jaw-breaking names such as "Trans-4-methylpentene-2," or "Ditertiary tetradecyl disulfide."

More important is their use. Among them are some of the purest materials available for research in industrial, university, and government laboratories throughout the world. In fact their pinnacle of perfection is so high that they are accepted as laboratory standards. For example, Phillips is the chief manufacturer of the only two primary gasoline engine antiknock reference fuels—normal heptane and isooctane—used around the free world.

Counting the various degrees of purity in which these "tremendous trifles" are made and sold, they total several hundred. Thousands of U. S. and foreign purchasers are valued Phillips customers.

The basic hydrocarbons for these specialty chemicals are painstakingly separated from refinery or natural gas liquids streams. Their production requires these readily available raw materials, as well as people with long experience in manufacturing, quality control, packaging, and marketing functions.

Phillips unique "tremendous trifles" are the pioneers of its petrochemical business. Back in the 1920's —before Phillips became a large-volume chemical producer—its scientists began separating high-purity hydrocarbons. They were first used in the Company's own research. Then, in response to demands, the Company started sales to other research people.

Some of these early Phillips "tremendous trifles" have graduated into "tremendous quantities." An example is butadiene, the principal component of most synthetic rubber.

A continuous search for means of best serving the interests of customers and stockholders: This is the guiding principle of all Phillips operations—large or small. It is the same today as it was when "tremendous trifles" spearheaded the Company's advance into petrochemicals. This is another reason why you can confidently "look ahead with Phillips."

PHILLIPS 66

PHILLIPS PETROLEUM COMPANY, Bartlesville, Oklahoma

Investment Implications of Long-Run Economic Trends

by John W. Kendrick

FROM TIME TO TIME it is a useful exercise to reappraise the long-term economic and financial outlook. Long-range projections are helpful not only in establishing distant investment objectives, but also in lending perspective to near-term market moves.

The main thesis of this article[1] may be stated briefly: Despite the slow start thus far, the 1960's may still be expected to show a marked acceleration of economic growth compared with the 1950's. The acceleration in corporate profits will be even greater than in national income and product. But, paradoxically, the rate of gain in stock market prices will probably be much less than in the 1950's. We shall be lucky to see a doubling in the averages between 1960 and 1970, compared with a tripling during the preceding decade.

To do even this well, earnings must continue to be capitalized in future good years at high price-earnings ratios near those of recent years. This means that in the future the dividend yield on stocks would typically, rather than by exception as in the past, lie significantly below the yield on Aaa bonds. The details of these general projections are given in the accompanying tables; the remainder of the article will provide the rationale behind the general order of magnitude of the numbers.

THE OVERALL ECONOMIC PROJECTION

In order to forecast the financial future, with special reference to the stock market, it is necessary first to forecast the growth of the economy as a whole, as measured by the real Gross National Product (GNP). Projection of the general price level makes it possible to convert the physical product forecast into GNP in current dollars, necessary for projecting corporate profits. Corporate profits, in turn, on a per share of equity basis, taken in conjunction with that most elusive of all variables — the price-earnings ratio — permit a projection of stock-price averages and dividend yields.

This, briefly, describes the framework of the following discussion and accompanying tables containing projections of the relevant variables to 1970, with comparison data for 1950 and 1960.

Labor Supply, Productivity And Real Product

Even the financial man will admit that basic to the increase in production of the country is growth in the supply of labor and especially in its productivity. He may be assured, however, that the all-important factors of the quantity and quality of capital per worker will receive due consideration in the discussion of productivity.

The labor force. The labor force can be predicted with considerable accuracy over the next 10 years, since all of the persons who will be in the labor force in 1970 are alive, so the projection is a matter of mortality, net immigration, and labor force participation ratios. Over the past decade, the labor force has grown by about ¾ million a year. In the decade 1960-1970, the growth will average about 1-1/3 million a year, according to the high Census Bureau projection.[2] This means about a 50% increase in the average annual percentage rate of growth, as shown in *Table I* (line 1), and more in the civilian labor force (line 3). Even the low projection of the Census Bureau indicates a significant acceleration in the rate of labor force expansion—since the population of working age will be growing more rapidly than in the past decade. The acceleration reflects, of course, the baby boom beginning after World War II.

The trend of employment (line 6) is projected at a still higher rate than the civilian labor force trend, since I assume 1970 to be a high-level year for the economy accompanied by a normal rate of frictional unemployment of 4.0%, which is less than experienced in the stunted boom year of 1960 (lines 4 and 5). Assuming a continued down-trend in average hours worked per week and per year (lines 9 and 10), we see that the rate of increase in manhours worked in the private economy will average 1.5% a year compared with practically no growth of manhours worked in the past decade (line 11). It is this factor that will give us a significant acceleration in economic growth, since I do not foresee any increase in the rate of advance in productivity over the next decade.

Productivity. Secular changes in productivity, defined in this instance as real product (i.e., output) per manhour, reflect primarily improvements in the organization and technology of production, and in the volume of capital per manhour.

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[1] Footnotes at end of article.

Dr. John W. Kendrick is professor of economics at George Washington University, consultant, and member of the senior research staff, National Bureau of Economic Research. He is well-known as an expert on productivity and economic growth. Princeton University recently published his volume, Productivity Trends in the United States. Dr. Kendrick is also a director of Automation Shares, Incorporated, a mutual fund. From 1946 to 1953 he was acting chief of the National Economics Division, U. S. Department of Commerce.

Table I

Labor Supply, Productivity, and Real National Product

Estimates for 1950 and 1960, Projection to 1970

Line No.		Actual		Projected	Average Annual Percent Rates of Change	
		1950	1960	1970	1950-60	1960-70
1	Total labor force (millions)	65.1	72.8	86.2	1.1	1.7
2	Armed forces	1.7	2.5	2.2	3.3	−1.3
3	Civilian labor force	63.4	70.3	84.0	1.0	1.8
4	Unemployment (millions)	3.3	3.9	3.4	1.6	−1.4
5	Percent of civilian labor force	5.2	5.6	4.0	0.7	−3.4
6	Civilian employment	60.1	66.4	80.6	1.0	2.0
7	Government	5.5	7.9	9.6	3.8	1.9
8	Private	54.6	58.5	71.0	0.7	2.0
	Average hours worked:					
9	Per week	41.0	38.9	37.0	−0.5	−0.5
10	Per year	2134	2022	1924	−0.5	−0.5
11	Total manhours (billions)	116.5	118.2	136.6	0.1	1.5
12	Real private product per manhour (1960 dollars)	2.82	3.86	5.19	3.2	3.0
13	Real private product (billions 1960 dollars)	328.8	456.4	709.0	3.3	4.5
14	Real government product	33.6	46.8	53.0	3.4	1.3
15	Total real product (GNP)	362.3	503.2	762.0	3.3	4.2

My duties for the National Bureau of Economic Research show that the rate of technological advance has been fairly steady over the past 40 years.[3] But the rate of increase in real product per manhour in the private economy accelerated from an annual rate of 2½% in the period 1919-48 to over 3% in the past decade. This acceleration was due chiefly to a much faster increase in capital equipment per worker since the war than in the preceding decades.

With the marked acceleration in labor force and manhours employed in this decade, the rate of increase in capital stocks per manhour is bound to slow down. Assuming that technological advance does not speed up much, if any, the increase in real product per manhour will fall a bit—on the table (line 12) we show 3.0% a year from 1960 to 1970, on average.

Future Acceleration Seen

There is a considerable body of opinion that expects some acceleration in the rates of technological advance in the years ahead. The advocates of this view point to recent large increases in research and development outlays, which are designed to produce cost-reducing inventions and innovations; the increasing numbers of college graduates and increasing average education of the population generally; and the spread of exciting developments in the field of automation over a growing industrial front.

Such arguments are not particularly convincing, however, when it is noted that research and development outlays have been increasing at a relatively steady rate in relation to sales for four decades; the average education of the population has likewise been rising for a very long time; and major innovations, like atomic energy or automation today, or electrification and flow production methods a generation ago, are necessary in order just to maintain our relatively high trend rate of increase in productivity.

There can be no doubt, however, that scientific discoveries, inventions, and technological innovations will continue at a high rate. Research and development outlays are projected at approximately $13 billion in 1961 and almost $20 billion by 1970. A continuing trend towards rapid increases in systematic research supported by industry, government and nonprofit institutions seems very likely. Only if the trend *accelerated,* however, could we expect acceleration in productivity advance. This is not entirely unlikely, in view of the increased American awareness, since the first Sputnik, of growing technological competition from the U.S.S.R. It is also possible that favorable revision in the institutional framework — particularly the tax structure and the educational system—may provide a more favorable environment for innovation. But it is dangerous to project much higher rates of productivity advance in this decade, since there are long lags and various social inertias that tend to delay the effects of intensified investments, and even limit the potential volume of innovation.

Real product. The preceding discussion explains why it seems reasonable to project the average rate of advance in real private product per manhour at 3.0% for the period ahead. When combined with the projected rate of increase in manhours, this yields an average rate of increase in total real private GNP of 4.5% a year between now and 1970 (line 13). Using the convention adopted by the Commerce Department, real government product is projected proportionately to manhours worked in government (line 14). This pulls down the projected average rate of advance in total real GNP to

4.2% a year (line 15 of *Table I* and line 1 of *Table II*).

So far, our analysis has proceeded in real terms. What about prices? It seems likely that the general price level will rise by around 2% a year on average during the decade ahead, only slightly less than between 1950 and 1960. This will be the result of upward pushes or pulls from the cost or the demand sides of the production equation, given an institutional framework that has changed significantly over the past 25 years.

Labor costs. On the cost side, we are familiar with the tendency of increases in average hourly earnings to outrun productivity advance. This can take place to a small degree consistently with a stable price level to the extent that compensation per unit of capital rises less than the output-capital ratio. This is the typical situation, since the increase in the quantity of capital relative to labor input has meant that the *relative* price of capital has fallen. But wage-rate boosts in the past decade averaging 5% a year have gone beyond this margin and have been associated with rising prices.[5] In some periods, the large wage increases have been pulled up due to a buoyant demand situation; in other periods the wage boosts have pushed prices up as producers have sought to preserve profit margins. In both cases, downward rigidity of wage-rates has meant that final prices have declined little, if any, in recent recessions.

During the first year of an expansion, such as the year 1961, productivity typically rises more than average, wage rate increases are still moderate due to continued abnormal unemployment, so that prices remain fairly stable. It is in the latter phase of expansion that price rises are really marked, as accelerating wage boosts are coupled with slowing productivity advance. It is these advances that make the upward price trend—advances that are probably in store in 1962-63 as a business cycle top is being approached.

Increases in average hourly earnings since 1947 have averaged better than 5% a year. In the years ahead, assuming conservative monetary management, the increase may be a bit less for two reasons. One is the accelerated growth of the labor supply. The other is increasing public disapproval of hikes in wage-rates which are believed to be inflationary. The former reason is apt to be more effective than the latter in slowing down advances. But there are still strong pressures within the labor unions making for large wage demands. I would expect the annual wage settlement in the years ahead to average upwards of 5%. Compared with the projected increase in real product per manhour of around 3%, this implies an increase in prices of close to 2% a year, on average, if capital charges and profit margins remain fairly constant.

Demand and profit margins. Investment demand is the key to demand in the economy generally. I think investment demand will be buoyant over the next decade for three chief reasons: (1). Accelerated labor force growth will accelerate the potential growth of demand for capital goods with which to outfit the increasing numbers of new workers. The associated increase in the rate of family formations will importantly bolster effective demand. The slower increase in capital per worker that lies ahead means that capital will be relatively less abundant in relation to labor, which will tend to raise the rate of return on capital and encourage the needed investment. (2). Replacement demand is beginning to accelerate, as the sharp step-up in purchases of capital goods after 1947 is increasingly reflected in replacement requirements. (3). The rapid scientific and technological advances that lie ahead, resulting in a continuing stream of new products and cost-reducing equipment, will also tend to bolster the rate of return on new investment.

If the monetary authorities pursue an easy money policy, I believe that the rate of return on capital would tend to rise. Even a tight money policy is unlikely to be carried far enough to push down prices and the rate of return, since this would be at the expense of economic growth and maximum employment. On balance, I think a steady to rising marginal and average rate of return on investment is likely.

Thus, whereas monetary policy will accommodate price rises associated with rising unit labor costs, it will probably not permit demand to rise fast enough to result in significant increases in rates of return on capital which would, of course, accentuate price inflation. Nevertheless, even a stable rate of return will halt its downward trend during the past decade. The downward trend helped mitigate cost-push inflation in the 1950's. In the present decade, even though wage-rates may increase less, the absence of falling profit margins means that the general price will be of the same order of magnitude as in the 1950's.

Current Value Product

An average annual rate of increase of 2% in prices of final products in the private economy, when combined with a 5% increase in the government product deflator, yields an average increase in the overall GNP deflator of 2.3% a year (*Table II*, lines 2, 3, 4). Since government product is the compensation of general government employees, the deflator is the average wage-salary paid, which accounts for its higher rate of increase.

It will be remembered that an average rate of increase of 4.2% a year was projected for the real GNP. Combination of the projected rates of increase in real product and in the general price level yields a projection of 6.6% a year average rate of increase in current dollar GNP (line 5). The acceleration from the 5.9% rate of increase in the 1950's is somewhat less than that projected for the real GNP, since a slightly lower rate of price inflation is expected in the 1960's compared with the 1950's.

THE FINANCIAL PROJECTION

Projections of the private economy national product in current dollars furnish a basis for projecting cor-

Table II

National Product, Corporate Profits, and Stock Market Averages
Estimates for 1950 and 1960-61, Projections for 1970

		Actual				Average Annual Percent Rates of Change	
Line No		1950	1960	First Half(a) 1961	Projected 1970	1950-60	1960-70
1	Total real product (GNP)	362.3	503.2	503.2	762.0	3.3	4.2
2	Implicit price index, 1960=100	78.6	100.0	100.9	124.7	2.5	2.3
3	Private economy	80.2	100.0	N.A.	122.0	2.2	2.0
4	Government	61.9	100.0	N.A.	162.0	5.0	5.0
5	GNP, Current dollars (billions)	284.6	503.2	507.9	950.0	5.9	6.6
6	Private economy	263.8	456.4	460.9	865.0	5.6	6.6
7	Government	20.8	46.8	47.9	85.0	8.4	6.1
8	Total corporate profits, adj. ($ billions)	35.7	45.0	41.5	80.0	2.3	5.9
9	Percent of private GNP	13.5	9.9	9.0	9.2	— 2.9	—0.7
10	Reported, book profits	46.0	45.0	41.0	81.0	1.0	6.0
11	After tax	22.8	23.0	20.5	41.0	0.1	6.0
	Moody's industrials:						
12	Net earnings per share	8.45	9.60	8.50	19.00	1.3	7.1
13	Price-earnings ratio (A)				14.0		—2.5
14	(B)	6.8	18.0	22.6	18.0	12.8	0.0
15	(C)				22.0		2.0
16	Average price (A)				266.0		4.4
17	(B)	57.83	173.20	192.5	342.0[b]	14.2	7.0
18	(C)				418.0		9.2
19	Dividend yield	6.3	3.6	3.1	2.7(C)[c]		
20	AAA Bond yield	2.6	4.4	4.3	4.8		

a. Seasonally adjusted at annual rates; preliminary estimates.
N.A. Not available.
b. This figure is equivalent to approximately 1200 on the Dow-Jones industrial average.
c. The dividend yield is computed using the "C" price projection on line 18.

porate profits. The percentage of private product that is carried down to corporate profits depends on (a) the ratio of invested corporate capital to gross private product; and (b) the percentage rate of return on the capital assets.

During the post-World War II period, the stock of capital assets, valued at current replacement prices, has grown at approximately the same rate as the gross private product. But the rate of return on capital assets has declined significantly between the 1948-1950 peak, and 1960. That is the major explanation of the drop in the ratio of corporate profits to gross private product shown in the table.

In looking ahead to 1970, I assume that the decline in the rate of return on invested capital will *not* continue. In the first place, the naturally buoyant demand situation described earlier will tend to raise profits as existing plant is operated closer to optimum rates than in recent so-called good years. Second, as buoyant demand tends to raise prices both directly and through pressure from costs, I doubt very much that the monetary authorities will pursue as tight a policy with respect to money supply as has been the case in the past decade. I am not basing this prediction on the recent change of administration; it is based on the more fundamental consideration that recent net profit rates have not been sufficient to elicit a large enough volume of investment demand to absorb the saving people would make at full employment levels of production—and consequently we have not had capacity levels of production. If our Federal agencies, including the Federal Reserve Board, are serious about implementing the Employment Act of 1946 and promoting economic growth, surely profit margins will not be further squeezed, and possibly they will rise moderately.

In the third place, the real rate of return on capital will rise relative to the real wage rate due to the accelerated increase in labor supply. As noted earlier, wage rates may well rise by less than they have in the past decade. Since relative prices of labor and capital are in part determined by relative supplies of the two factors, the relative price of capital should rise. It is true that the capital stock will also grow faster in the decade ahead than in the 1950's, but assuming that the same proportion of national income is saved in the 1960's as in the 1950's, the growth of capital per worker will be slower in the years ahead.

Growth of Capital Stock

On the assumptions of a constant ratio of saving to income, the growth of capital stock will tend to lag the accelerated growth of the GNP. That is why the projected corporate profits in 1970 are a smaller proportion of private national product than in 1960 (line 9). Although the rate of return on capital is assumed to remain constant, the decline in the capital-product ratio reduces the proportion of profits in the national product. But note that on net balance, we are carrying 8% of the increase in private GNP down into corporate profits, compared with the 6.3% that was carried down between 1948 and 1960.[6]

The first profit figure shown in the table (line 8) is after adjustment by the Commerce Department to eliminate the profits on inventories due to price increases. The reported profit figure includes these profits (line 10). In projecting the latter to 1970 after deduction of tax liability, it is assumed that the present corporate tax rate of 52% on net income above $25,000 will apply then (line 11). In this regard, our projection is conservative, since if government expenditures increase no more than in proportion to GNP, tax rates can be cut. And the corporate rate is a likely candidate for reduction if the government is serious about stimulating economic growth.

In the next line (10), we translate reported corporate profits after tax into per share earnings on Moody's industrials, based on the past long-run relationship.

Price-Earnings Ratios and Stock Prices

Perhaps the most speculative step of all must be taken next, and that is to project the price-earnings ratio in order to come up with a projection of average stock prices. We are, of course, projecting for a year of high-level economic activity.

Historical review. In the past boom years of 1929, 1937, 1945, and 1957, the ratio of prices to earnings have averaged between 14 and 16 to 1. Compared with this range, it will be noted that the 1950 ratio was low, while that for 1960 appears high. The ratios of around seven that prevailed from 1948 to 1950 were abnormally low, due to the false expectations of a severe post-war depression. With signs of recovery from what proved to be a mild recession in mid-1949, the market began a long upward ascent, but through most of 1950 the rise was no greater than the increase in earnings. Even by 1953, the price-earnings ratio was only 10, but by the next cycle peak in 1957 it had recovered to the more normal multiple of 14.

From 1958 to 1960, however, the ratio averaged around 18. The increase in a recession year is normal, but the maintenance of a multiple of 18 to 1, or better, in the subsequent recovery and in the peak business year 1960 was unprecedented in this country. In part, this may be ascribed to the incomplete nature of the recovery peak in 1960—the market may be interpreted as having capitalized the *potential* profit level of a true boom at a more conventional rate. Subsequent market action, however, suggests that there has been a further upward shift of the price-earnings ratio. In the first half of 1961, the ratio has risen close to 23:1. If the precedent of 1958-60 holds, the ratio may well drop somewhat between the first year of recovery (1961) and the last (say 1963). That is, corporate profits will probably increase by at least one-third as the GNP rises to a full-employment level of around $580 billion in 1963 from $515 billion or so this year. This would make possible a further increase in stock prices, say of 15% or so up to the 800 area on the Dow-Jones industrials, and at the same time a corresponding drop in the price-earnings ratio to around the 20 level. To get back down to an 18:1 ratio would mean that the market has but a negligible rise left during the next two years or so, which seems unlikely at this early stage of the economic recovery.

The increasing price-earnings ratios of recent years may be analyzed as reflecting upward revisions of future net income expectations and/or an increase in the rate at which expected future earnings are discounted. Why should future income expectations increase, on average? For one thing, as we have demonstrated, an accelerated rate of growth in output appears to be in the cards for some years to come while prices continue to creep up at a rate near that of the post-war period to date. Secondly, if our projection for 1970 is even roughly correct, there will be a significantly greater acceleration in the rate of increase in profits than in the current dollar GNP.

Why might the capitalization rate of future earnings itself be increasing? A chief reason is a reduction in the risk premium associated with uncertainties surrounding future income. It is possible that risk premiums are falling due to increasing "growth mindedness"; i.e., a greater psychological certainty felt by investors on average, about strong future growth of income and profits. On the other hand, the risk premium associated with bonds has been rising as the expectation of continuing inflation has spread.

Also important is the increasing conviction that major business fluctuations have been conquered by the built-in stabilizers and better governmental policy in this regard. This outlook for much milder cyclical fluctuations has been reflected in the upward trend in the price-earnings ratios of cyclically sensitive groups such as the steels. Such an upward revision in certain industry groups is reflected in an increase in the *average* price-earnings ratio.

Associated with the reduction of the risk premium attaching to common stocks has been the well-known increase in institutional purchases, as well as broadening public participation, generally, in the stock market. At some point, however, the relative shift to stocks from alternative forms of investment is self-limiting, as will be discussed in the next section.

Projection of the P/E Ratio And Stock Prices

Table II shows a range of projected price-earnings ratios and associated average equity prices. The 14 multiple "A" is near the traditional ratio for high level years (line 13); 18, or "B" ratio, is the 1960 multiple (line 14); and the 22 ratio "C" is included to allow for the possibility of some further rise in income expectations and capitalization rates as foreshadowed by early 1961 market action (line 15).

I am convinced that the average rate of appreciation in the stock market, at best, will be substantially less in the 1960's than in the 1950's. Note that most of the rise in the 1950's was due to recovery of the price-earnings ratio to normal levels, and its penetration to new high ground. It is out of the question to expect any such increase in capitalization rates in the next decade; in fact, it may be somewhat "indiscreet" even to project the recent high P-E ratio. Remember that the higher the market relative to its earnings base, the more vulnerable it is to shock—and despite the bright outlook for strong growth, risks will always be with us. Further, as the P-E ratio rises, the dividend yield falls and at some point the bond yield will exert an upward pull and thus tend to restrain the rise in stock prices as more investors shift to bonds.

In 1950, the dividend yield on Moody's stocks was 6.3%, compared with a yield on Aaa bonds of 2.6%. By 1960, the relative position was reversed: the dividend yield was 3.6% and the Aaa bond yield 4.4% (lines 19 and 20). A higher yield on stocks has prevailed for almost three years now, and I expect that some spread in this direction will continue to be the typical situation. That is, I think that the prospect for appreciation of real earnings, dividends, and capital values for stocks more than outweighs the greater risk premium attaching to stocks. The lower dividend yield is common in Europe.

Significance of Equity Capital

The spread may even increase somewhat in this country in the next decade. But at some point—and probably one short of the 2.7% dividend yield implied by the P-E ratio of 22, investors will tend to shift into bonds. Further, the better than 6% rate of growth of sales anticipated in the 1960's means that more new capital will have to be raised. The relatively cheaper cost of equity capital means that an increasing proportion of the increasing volume of new funds will probably come from new stock issues. This increases the supply of stock, which will also tend to prevent prices from continuing to rise in relation to earnings, and the increasing relative scarcity of bonds will help stabilize the bond-stock yield ratio.

Also, the higher the price-earnings ratio, the higher the risk premium should be to cover the increasing possibility that the ratio could fall due to: less real growth or less inflation than expected; greater cyclical fluctuations than expected; lower earnings relative to sales; and shocks to confidence from domestic or international political events. Looking at projection "B" for 1970 in *Table II* (line 17) for example, it can be inferred that the risk premium implied for equity as compared with bond ownership is around 5 percentage points. That is, a 3% dividend yield plus a 7% average annual appreciation rate gives a 10% average annual total yield on stocks, compared with 5% on bonds.

Finally, the reader should be fully aware of the uncertainties and possible errors attaching to the stock-price projection. The economic projection itself is subject to some margin of error, possibly around 0.5 percentage point with reference to average annual growth rates of the GNP. The margin of error of the profit projection is probably greater than that of the GNP projection. But the chief uncertainty lies with the projected range of the price-earnings ratio. It seems probable, for reasons given earlier, that the ratio will be generally higher than the 14 or 16 to 1 ratios in past good years—but major shocks to confidence *could* push the ratios below this. It also seems unlikely that the upward trend of the ratio will set new norms significantly above the 22:1 ratio suggested by 1961 market action. Certainly further upward movement will meet increasingly strong resistance. But we are dealing with valuations that are, in the last analysis, rooted in psychological elements. Further spread of a "new era" psychology could conceivably support price-earnings ratios of 25:1 or better — until an unexpected major shock to confidence served to deflate expectations and capitalization rates. The increasing risk of a downward revaluation as capitalization rates mount is itself a major reason why we have not stretched the projected range further on the high side.

Even with the high projection C, the rate of increase in the industrial average between 1960 and 1970 will average about 9% a year, less than two-thirds the 14% rate of increase from 1950 to 1960 (line 18). Taken from the levels attained at mid-year 1961, the average rate of increase for the remainder of the decade is still almost 9%. Assuming 18:1 P-E ratio of projection B, the appreciation of industrial stocks would average only half as much in the 1960's as in the 1950's (line 17); and projection A gives only one-third the growth (line 16). Only under the improbable assumption of continuing substantial increases in the price-earnings ratio can we avoid the conclusion that there is significantly less appreciation of stocks in prospect for the next decade than we have experienced from 1950 to date.

Footnotes

1. This is a somewhat revised version of a lecture delivered by Professor Kendrick at the Institute of Investment Banking, Wharton School of Finance and Commerce, University of Pennsylvania, March 30, 1961.

2. Current Population Reports, Series P-50, No. 69, as revised in the Census Bureau mimeographed release dated December, 1958, for consistency with the population projections, Series P-25, No. 187.

3. John W. Kendrick, Productivity Trends in the United States, Princeton University Press for the N.B.E.R., 1961.

4. See Long-Range Projections for Economic Growth: The American Economy in 1970, National Planning Association, Pamphlet No. 107, 1959.

5. See John W. Kendrick, "The Wage-Productivity-Price Issue," California Management Review, Spring, 1960.

6. During the years 1929-41, changes in private product were associated with 10 percent as much change in corporate profits, on average. But this relationship was largely a cyclical one and not applicable to periods of secular growth.

LOCKHEED
Progress Report

The Air Age is really not here yet, according to some experts. But it's coming fast on the wings and rotors of safer, simpler vertical aircraft.

UP & DOWN AIRCRAFT

Clue to the future in Paris. Almost every shape and size of vertical and/or short takeoff and landing aircraft--military and commercial--was represented at this year's international air show in Paris. Huge transports. Bug-like whirlybirds. Workhorse helicopters with giant rotors. Pull-up types, push-up types, types that tilt wings and motors. This year the trend is clear: it's straight up.

Most people never get off the ground. Even though air travel is now in its second half century, only a paper-thin slice of the world's population has even been up. Many experts think it is only a matter of time, however, till hundreds of thousands take to the air in vertical-flying vehicles--just as they took to the road in Model Ts. The real air age, they say, will come when vertical-flying machines are (1) priced in the automobile range, (2) made as easy to operate as autos, (3) made so safe it would be almost impossible for anything to go wrong. Large order? Yes--like every big challenge the aviation industry has faced.

Get the Army out of the mud. Greater emphasis on limited war capability is spurring Army modernization plans for thousands of VTOL (vertical takeoff and landing), STOL (short takeoff and landing), and V/STOL (vertical or short takeoff and landing) aircraft. Troops need them to jump quickly over rough or swampy terrain, to observe enemy positions, to evacuate casualties, even to fight from the air if need be.

"The first real step forward." That's what a high-ranking military officer said about Lockheed's new light helicopter before Congress recently. He said that the new craft, which features a rigid rotor system using a gyroscopic principle, achieves a "high degree of inherent stability previously unknown in helicopter flight"...(it is) "the first real step forward...to bring about the cut in cost, the maintenance, improve the reliability, and make it easy to train people to fly the things." The Army and Navy both have expressed interest in this new Lockheed design.

The Georgia Hummingbird. The Lockheed-Georgia Company has contracted with the Army Transportation Research Command to build a vertical-takeoff-and-landing jet that will hover in mid-air and fly at high speed. Aptly named Hummingbird, the craft is a new approach to vertical flight.

Look for Lockheed in the New Air Age. The military VTOL, STOL, and V/STOL market promises a rampant growth for years to come. The airfreight boom has barely begun. And close at hand is the exciting new era of personal air mobility. In short, Lockheed agrees with those who say that the real Air Age has yet to come. And Lockheed is doing everything possible to bring it.

* * * * *

If you would like to join those in the financial community who receive reports on Lockheed's activities throughout the world, write Mr. Ernest A. Foster, Director of Stockholder Relations, Lockheed Aircraft Corporation, 2555 N. Hollywood Way, Burbank, California.

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It Takes Two to Speak the Truth— One to Speak, and Another to Hear

—Thoreau

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Each group speaks to the other . . . each group hears . . . and both come away having gained a clearer insight into the truth of our way of life.

HIGHLIGHTS OF THE SIX MONTHS ENDED JUNE 30

	1961	1960
Total revenues	$178,896,000	$175,973,000
Net income	$ 19,300,000	$ 17,733,000
Net income per share	$1.35	$1.28
Dividends paid:		
Cash—per share	$ .80	$ .80
Common stock	2%	—
Capital expenditures	$ 22,821,000	$ 24,616,000
Exploration expense	$ 11,887,000	$ 15,164,000
Shares of common stock outstanding (Excluding shares in Treasury: 1961—12,031; 1960—124,400)	14,273,003	13,876,775
Net crude oil and natural gas liquids produced—barrels	21,465,000	19,530,000
Crude oil refined—barrels	16,306,000	18,129,000

On August 1, 1961, the Board of Directors declared a dividend of 40 cents per share payable September 11, 1961, to shareholders of record August 18, 1961.

Left to right: Howard H. West, Vice President, Administrative Services, The Ohio Oil Company; Grant H. Young, Vice President, Marketing, The Ohio Oil Company; Miss Doris Sponseller, Chairman, Secretarial Studies, College of Commerce, Ohio University; Dr. Paul E. Fertig, Chairman, Department of Accounting, College of Commerce and Administration, Ohio State University; Dr. William R. Muehlberger, Assistant Chairman, Geology Department, University of Texas; Dr. C. Drew Stahl, Department Head, Petroleum and Natural Gas Engineering Department, Pennsylvania State University.

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The 'Internal-Cash-Generation' Phenomenon

by Konrad Engelmann

BASED ON A SURVEY OF 600 annual corporate reports, of which 190 included some type of "cash flow" statements, Dr. Perry Mason, research director of the American Institute of Certified Public Accountants, wrote an article in the March 1961 issue of "The Journal of Accountancy."

These reports show a great variety of terminology and form of presentation and give—at the same time—evidence of the danger of misinterpretation which is involved in the application of "cash-flow" data for reporting purposes.

In an earlier article, published in The Journal of Accountancy in October 1958 under the heading "Cash-Flow-Earnings—a Dangerous Concept," a warning has already been expressed by the editor against erroneous interpretations of the financial effects of depreciation, amortization, and other charges against income not requiring cash-outlays.

From the material published in Dr. Mason's article early this year, it follows that reporters and analysts have not only disregarded the warnings of several years ago, but that "cash-flow" analyses are applied presently on a larger scale than ever before. It therefore seems appropriate at this time to reconsider the nature and the financial effects of the so-called "non-cash expenses" in order to do away with certain misconceptions which, in the long run, may lead to financial confusion.

The immediate effect of non-cash charges against income is a reduction of the net income balance of the profit and loss account, performed by a mere bookkeeping transaction. One of the aims of such transactions is to avoid cash-outlays in form of dividends to share-holders of that part of income which does not represent profit.

Most "adjustments" of net income enter into the books at the end of fiscal years. Regularly, a great variety of such book entries is required, some of them adding to and others deducting from gross income. Prepaid rent, insurance, sometimes also wages, etc., are transferred to deferred charges accounts and add to income of the closing period the amounts of former outlays on account of the ensuing period. On the other hand, advance payments received, inventorized supplies for which the suppliers' bills are not received yet, and other obligations based on the ending year's operations and still unaccounted for, are deducted from income by a transfer to accrued liability accounts. Moreover, foreseeable losses and reduced asset values are charged against income and add to the considerable number of non-cash transactions which influence net income.

With the exception of the above mentioned transfers of expense to deferred charges accounts, the accounting operations listed in the foregoing paragraph and similar adjustments reduce income and consequently the amount available for dividends. Although mere book entries, these operations bring about a certain accumulation of funds by retaining earnings—which otherwise may be disbursed to the owners of the enterprise. It is this phenomenon of "retained earnings" as a consequence of non-cash charges against income, that causes many Analysts to worry about the extent to which cash is accumulated internally as a consequence of steadily increasing investments in fixed assets and correspondingly increasing depreciation requirements. A very considerable part of gross income is absorbed by depreciation, amortization, depletion and similar charges, which unquestionably lead to no less considerable accumulations of retained earnings. The internal cash generation effect of non-cash expenses is the startling point of financial analysis.

Depreciation Accounting

Theoretically, there is no difference between depreciation accounting and other value adjustments. The following remarks refer to the basic nature of depreciation accounting.

Purchase or construction costs of fixed assets enter into the accounts primarily as deferred charges to be amortized periodically according to the share each ensuing period has in the consumption of the goods. Such amortization by annual depreciation rates represents, therefore, not an adjustment of asset value in its narrower sense, but a distribution of cost. At the same time, the depreciation rates effect the recovery of previous cash-outlays for the purchase or construction of the respective fixed assets.

Each year's net earnings are reduced by these rates, which are fictitious cash-outlays, adding up at the end of the period of amortization to the total actual cash-outlays performed a long time ago. In principle, therefore, depreciation rates are no different from the refunds of short-term cash out-lays such as wages, material cost, overhead, etc., which form the elements of total cost. All these elements of calculated cost, whether they originate from recent cash-outlays or from payments made long ago, are supposed to be covered, when sales are performed at reasonable prices. Sales proceeds are the genuine source of income, which consists of two parts: refunds of former outlays; and when sales prices

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Konrad Engelmann, international economist, is a former executive of the General Central Bank for Co-operatives and an associate director of the German Auditing and Trust Corporation, as well as having been a governmental advisor on accounting and business administration to the Turkish Government. Currently he's writing a book on business economics.

exceed cost-profit. Net income is the difference between incoming cash from sales receipts and previous cash outlays for the goods sold.

From this it follows that the method of computing cash-flow totals, as in the statements reproduced in the article referred to above, i.e., the addition of net income plus depreciation and amortization charges, is an arbitrary combination of incommensurable items.

In the accompanying table, operating income of an enterprise is grouped according to different types of outlays, representing the uses made of income. The remarks that follow, lead back to the "internal cash generation" problem, which is the main topic of this article.

Operating Income and Its Uses

1. Gross income from sales, etc.

Less:

2. Current expenses charged against income during year (cash and accruals)

---

3. Excess of gross operating income over current expenses

Less:

4. Adjustments:
    - (a) Deductions from income of expenses regarding the closing period, previously not entered into the accounts (accrued liabilities, also provisions for taxes, tax deferrals, etc.).
    - (b) Income absorbed for devaluation of assets (losses and foreseeable risks), such as doubtful receivables, inventory losses, etc., not covered by existing reserves.
    - (c) Income absorbed for depreciation, amortization, depletion of fixed assets (deterioration), distribution of original cost values p.r.t.
    - (d) Income absorbed for other liabilities originating from operations of the closing period.

---

5. Net operating income, absorbed by transfers to free reserves, surplus and retained earnings accounts, the rest being distributed to owners.

The table combines cash and non-cash items. The term "cash-flow" is not applied, since accounting is generally not on a cash basis. "Net income", the initial figure in all "cash flow" statements analyzed by the Institute's research group, is the combined result of cash and non-cash operations. This already shows the misleading character of the term "cash-flow."

It is in the "Adjustment" area (group 4 in the accompanying table in which the internal cash generation problem arises. The fact that earnings are retained in business as a consequence on non-cash charges against income is indisputable. The conclusion, however, that the effect of retaining earnings is equivalent to cash generation, is wrong. A clear-cut differentiation between two types of adjustments should be made for the purpose of separating genuine cash generating effects from cash reserved to meet existing obligations, or to replace lost or deteriorated assets. The "Adjustment" group (Item 4) should, therefore, be subdivided into the following two categories:

A. Accruals of accurately discernible amounts, pertaining to specific obligations of the ending period, and amounts required for replacement. These will include adjustments for known complete loss, exactly determinable asset devaluation caused by deterioration, and periodic amortization rates for depreciation of fixed assets and for other values consumed over a longer period. Cash retained for these purposes will be used in the near future for liquidation of existing debts or replacement of assets lost or absorbed.

B. Additional adjustments, not directly related to discernible obligations and/or devaluations. These will consist of provisions for undeterminable liabilities, precautionary transfers to reserves, and similar deductions from asset values. Cash thus retained represents in effect hidden reserves, equivalent to additions to free reserves, surplus, and openly retained earnings.

While the adjustments in group "A" are required for the preservation of existing capital stock, group "B" may, in effect, add to working capital. It would, therefore, be logical to add (1) Net Income, (2) transfers to Free Reserves, Surplus and Retained Earnings accounts, and (3) adjustments in the nature of group "B" above.

In contrast, there is no logic in adding net income to all non-cash charges against income, regardless of the purpose for which the latter are made.

A careful analysis is required, especially with regard to depreciation allowances, before labeling them as "internally generated cash" or as "funds derived from operations." In most cases, depreciation rates represent mere expense, sometimes the verification of previous hidden losses, and only to a lesser degree the creation of a reserve. Even accelerated depreciation does not result in the formation of a free reserve as long as it is not in excess of original cost. Up to the former cash-outlay for the respective asset, accelerated depreciation effects speedier cash recovery, not accumulation of new funds. (The tax effects of accelerated depreciation do not pertain to the subject under discussion).

Behind the "cash flow" concept reflected in most statements under review in Dr. Mason's article, there seems to be concealed the rather dangerous idea that business operations are not "actual" unless connected with cash movements and, vice versa, and that every cash accumulation based on non-cash charges against income equals "internal cash generation." This error originates from a predominantly periodical approach to financial analyses. In the long run, every business operation stems from cash transactions and ends in cash payments—but this simple truth has nothing to do with the fiscal year concept on which periodical statements are necessarily based. The annual balance sheet and profit and loss accounts are artificial tools, required to render periodic account of the situation and performance of an enterprise to all concerned. Without them, internal and external control, as well as planning, would not be possible.

With the exception of the few enterprises which perform seasonal operations only, business never stops and closing data are fictitious notions. To make statements at any closing date as realistic as possible, adjustments, anticipations, and deferments are necessary. They modify net income as if the anticipated operations had already occurred. Although partly based on assumptions, the financial statements at the end of a fiscal year are of actual significance, regardless of some unavoidable shortcomings due to the fact that estimates and approximations are involved. To disregard the real purpose of such adjustments as depreciation allowances and similar non-cash operations, by treating them like arbitrary deductions from income, is a misinterpretation of basic principles of accounting.

Actual 'Cash Flow'

The indisputable fact, that non-cash charges against income result in cash accumulations, should be regarded realistically. Cash receipts and outlays form a permanent flow of money—the actual "cash-flow" through the enterprises. Current cash requirements are covered by whatever cash is available, regardless of source. It may be from income, or cash at hand from a former period, or new funds invested, or loans. As a rule, there is no way to determine the origin of a particular amount of cash used for a specific outlay. The daily cash balance gives no evidence of the profit and loss situation except for small retail shops, operating merely on a cash basis.

The accounts register all operations, cash and non-cash, and show the balance of income and expense at the end of a period—again: cash and non-cash. The net income balance reflects the result of the ending period; i.e., *of the past.* To the extent that this net income has been reduced by non-cash charges against income, the outflow of money required to meet all obligations is stopped. Reduced dividends will be paid after the end of the period in which they were earned. The cash accumulation effect therefore regards *the future.* Adding together net income of one period and cash preserved in the next period, is certainly not representative of cash flow of the ending period.

Actual cash flow data can be derived from current cash surveys by means of specific investigations only, beside the regular bookkeeping evidence. "Cash-flow" in the term's broader meaning is nearly identical with "funds derived from operations," as it is also defined in Dr. Mason's article. Only by stating completely all sources and dispositions of funds, can the financial development of a period be fully recognized. For this purpose, gross income from sales and/or services rendered, not net income, should be the starting figure of such statements.

Some examples shown in Dr. Mason's article combine sources and dispositions statements with the "non-cash expense" concept. By adding "net income of the year" and "expenses which did not require the outlay of cash—depreciation and amortization," as shown on different tables in the quoted article, both sides of the statements are incomplete and accordingly misleading. The true amount from which "cash derived from operations" may properly be obtained, is total gross income. Cash and non-cash expense, including depreciation and amortization, which eventually could be listed separately, would then belong under part two of the statement; i.e., "disposition of funds." Non-cash charges in excess of adjustments actually required to meet obligations and decreases of asset values would form a part of the remaining balance, i.e.: "increase of working capital."

CONCLUSIONS

Some final remarks may be appropriate with regard to the financial effect of depreciation accounting in its narrower sense. Depreciation accounting is a two-sided operation: On one side it effects a fair distribution of cost over the use-periods of the respective assets. For this purpose, the purchase or construction cost were originally "deferred;" i.e., capitalized instead of accounted for under expense when the bills were paid. This is the cost aspect of depreciation accounting.

On the other hand, depreciation accounting effects the transformation of fixed into liquid assets by retaining income in the amount charged as depreciation. This is the fund generating aspect of depreciation accounting. With regard to this aspect, which may be characterized as "re-liquidation of temporarily frozen funds," the

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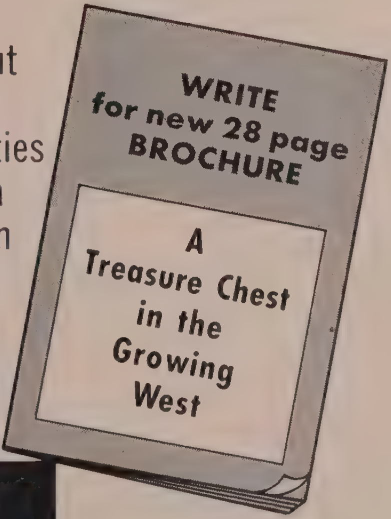

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in a Growing West

writer does not fully agree with Dr. Mason's statement that "Depreciation is neither a source of funds nor a provision for financing replacements of property . . ." Depreciation, as this writer sees it, is the medium of refunding cash outlays previously invested in fixed assets (besides the cost distribution or deferred charges amortization object). As such, it adds to cash available for whatever purposes management desires — eventually also for the replacement of obsolete assets. This is, of course, a rather indirect effect, which cannot be looked at as genuine production of cash for the special purpose of financing replacements of property.

Financial Analysts often compare additions to property of one period with depreciation allowances made for the same period. In a recently published balance sheet analysis, new fixed asset investments of two million dollars were compared with approximately one and one-half million dollars for depreciation, and the Analyst came to the conclusion that about three quarters of the new investments were "self-financed; i.e., financed by reinvesting the amounts retained in business as a consequence of depreciation accounting. This is an arbitrary conclusion and may, in most cases, be misleading. The actual method of financing additions to fixed assets cannot be analyzed without a comprehensive study of all operations involved. The inter-relationship of funds and operations, assets and liabilities, does not permit random selections of a single item for comparison with another, unless there is a clearly recognizable connection between the two.

Such connections exist, where specific loans are granted, or separate funds are set aside, for investment purposes. The latter method is a rule in Communist countries according to a recent report from the Soviet occupied zone of Germany, where the cash equivalent of depreciation allowances has to be deposited with a governmental bank. New investments depend on a withdrawal permission to be applied for in every individual case. Since free enterprise disposes of more appropriate means of financial self-control, the efficiency of such controls must not be endangered by misleading concepts of the internal cash generation effects of accounting procedures as described above.

A Summary

"Cash-flow" statements based on a combination of net income and non-cash charges against income are misleading, because: Net income is the result of cash and non-cash operations as reflected in the profit and loss account, which is not indicative of the cash position at the closing date. Furthermore, there is no evidence that funds generated internally by means of non-cash charges contribute to income, except for clearly recognizable additions to free reserves. Most non-cash expenses do not exceed previous cash outlays or decreases of asset values. They refund or replace decreased cash and other assets, preserving the substance of the enterprise without adding to it as net income does.

An addition of net income and non-cash expenses without careful analysis of both factors, distorts the results of financial statements and leads to wrong conclusions.

OUTBOARD MARINE

OUTBOARD MARINE CORPORATION

DIVIDEND NOTICE

A cash dividend of twenty cents (20c) per share on the Common Stock of the Company has been declared by the Board of Directors, payable August 25, 1961, to stockholders of record August 10, 1961.

R. F. WALLACE, Secretary

July 27, 1961

401st Dividend

Pullman Incorporated

95th Consecutive Year of Quarterly Cash Dividends

A quarterly dividend of fifty cents (50¢) per share will be paid on September 14, 1961, to stockholders of record August 21, 1961.

WILBUR E. WOLFE
Vice President & Secretary

Division and Subsidiaries:
Pullman-Standard division
The M. W. Kellogg Company
Trailmobile Inc.
Trailmobile Finance Company
Swindell-Dressler Corporation
Transport Leasing Company

STANDARD BRANDS
Incorporated

COMMON STOCK DIVIDEND

The Board of Directors increased the quarterly dividend rate to 45c per share. This dividend is payable September 15, 1961 to stockholders of record on August 15, 1961.

PREFERRED STOCK DIVIDEND

The Board also declared a dividend of 87½c per share payable September 15, 1961 to stockholders of record on September 1, 1961.

Joseph H. Hoyt
Treasurer

July 27, 1961

energy... *The progress of our national economy depends upon a continuous supply of energy for homes and industry. Today, 30 per cent of this energy comes from natural gas, delivered on the spot by a nationwide system of pipelines. > Texas Gas is a leading force in the modern miracle of gas transportation throughout the rich heart of mid-America. To industries seeking abundant supplies of economical gas energy, as well as advantageous location, transportation facilities and labor, Texas Gas recommends the strategic eight-state region which it serves.*

TEXAS GAS
TRANSMISSION CORPORATION
Offices: Owensboro, Kentucky • Houston, Texas

SERVING THE BIG RIVER REGION

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Prosperity and good living are New England household words. The schools you need, the mountains and seas you love, are here. And opportunity beckons in highly diversified industry. Come share our good fortune.

NEW ENGLAND ELECTRIC SYSTEM

NEW ENGLAND ELECTRIC

"SERVING TWO AND ONE-HALF MILLION PEOPLE IN A REGION WHERE DIVERSIFIED SKILLS BRING SOLID GROWTH."

GROWTH YIELDS

by Robert M. Soldofsky

WHAT ARE THE DIVIDEND YIELD and price-earnings ratio on a (very high rate of) growth stock that is selling for $600 per share, paying $4.00 per year in dividends, and earning $10 per year? What are the dividend yield and price-earnings ratio on a (medium rate of) growth stock that is selling for $100 per share, paying $2.00 per year in dividends and earning $5.00 per year? What are the dividend yield and price-earnings ratio on a public utility share that is selling for $100, paying $4.00 per year in dividends, and earning $7.00 per year? The dividend yields and price-earnings ratios on these three hypothetical shares are as follows:

	Dividend Yield	Price-Earnings Ratio	Earnings Yield*
Rapid Growth Stock	0.75%	60 times	1.7%
Medium Growth Stock	2.00	20 times	5.0
Public Utility	4.00	14.3 times	7.0

*The multiplier and price-earnings ratio are reciprocals.

Which of these shares is the best buy? Is a high grade bond yielding 4.50% (on a yield to maturity basis) a better buy? Of course, the answer depends in part on the degree of certainty with which the buyer (or owner) holds his projection for the company, for the industry of which the company is a part, and for the entire national economy. Each Financial Analyst may have some rule of thumb for comparing the types of situations illustrated. Even if the dividends and earnings projections were certain, how could the dividend yields be compared directly with one another and with the yield on bonds? Clearly, the three dividend yields specified are not stated on a strictly comparable basis. In fact, Analysts' rules of thumb are developed largely because the yields are not strictly comparable.

Is there a method by which yields can be specified on a precisely comparable basis? Yes! Yields can be calculated by discounting the expected *rising* dividends streams and relating the sum of the discounted values to the market prices of common stock; this yield may then be called the growth yield. For example, according to *Table II,* if a share of common stock is now paying a $1 dividend per year, and the dividend is expected to increase at the rate of 4% per year for 20 years, the growth yield will be 3% when the market price is $62.41. The current yield on the market price is 1.6%; alternatively, to obtain 3% on a current yield basis the market price would have to be $33.33.

Some Analysts may point out that even if growth yields can be constructed, they would still be of limited usefulness because a major motivation in the purchase of growth stocks is the hope of obtaining capital gains. Although the problem of calculating growth yields including capital gains will not be discussed, the procedure is only slightly more time consuming and very little more complicated than that of determining the dividend growth yield itself.

In the balance of this article the meaning of growth yield will be described more fully, and the major limitations of the "current" dividend yield and payout systems of evaluating alternative stocks with rising dividends will be reviewed. The limitations of the growth yield concept itself will be admitted, and illustrations of growth yield tables will be given. The growth yield concept will be used to restate the spread between bond yields and stock yields.

The usual dividend yield on common stocks is called here the "current" dividend yield because it is in some ways comparable to the "current" yield on bonds. The current yield is defined as the current dividend divided by the market price or $D \div MP = DY$. What does this equation imply?

It implies that a dividend of some amount, say $1 per year, divided by the market price is the correct dividend rate under the conditions implicit in the formula. The formula is virtually always taken to imply that the present value of a series of *equal payments* extended *indefinitely* into the future and discounted at a *uniform rate* will be identical with the amount determined by the formula. In other words, a dividend of $1 per year discounted at some rate is equal to the market price. If the rate is 5%, the market price is $20 or $1 over .05 = $20. Five percent is the true yield or rate of interest. But, again note the precisely specified conditions: (1) the dividends continue indefinitely into the future; and (2) the amount of dividends per period remains unchanged.

In the case of the vast majority of well-known stocks it is true that dividends are expected to continue into the future without any foreseeable limit, but it is not true that the dividend payment is expected to remain unchanged. Investors expect dividends to rise more or less regularly for some period of time and such expectations are very likely to be fulfilled. In the case of such common stocks, then, the current dividend yield, which implies a constant amount of dividends continuing indefinitely into the future, does not state the yield on a basis that conforms with expectations.

What is needed is a growth yield, a yield which equates the expected rising stream of dividends with the market price. Once the problem is stated in this way two new bits of information are needed, namely, the

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Dr. Robert M. Soldofsky, associate professor of finance at State University of Iowa, received his doctorate at Washington University in 1953. Dr. Soldofsky has had a wide range of business and financial administrative experience and is the author of many articles and textbooks.

Table I

Determination of a Growth Yield

Year	Projected Dividends Per Year	Present Worth Factors at 9%	Present Worth of Dividends for Each Year
1	$1.00	.9174	$ .9174
2	1.04	.8417	.8745
3	1.08	.7722	.8340
4	1.12	.7084	.7934
5	1.17	.6499	.7604
6	1.22	.5963	.7275
7	1.27	.5470	.6947
8	1.32	.5019	.6625
9	1.37	.4604	.6307
10	1.42	.4224	.5998
11	1.48	.3875	.5735
12	1.54	.3555	.5475
13	1.60	.3262	.5219
14	1.67	.2992	.4997
15	1.73	.2745	.4749
Beyond 15 yrs.	1.73	3.0504*	5.2772*
Total Estimated Value of Stock			$15.3905

*The sum of the present worth factors at 9% for a perpetual income earning asset approaches $11.111,111. This is the same factor used in capitalizing income at 9% ($1 ÷ .09 = X or Income ÷ Rate = Principal.) The sum of the present worth factors for 15 years at 9% is $8.060688. The difference between $11.111,111 and $8.060688 or $3.050423 is the value of the present worth factors from the fifteenth year on. Assuming the income remains $1.73 per share, the present value of the income stream beyond the fifteenth year is $1.73 × $3.050423.

Table II

Growth Yields on Common Stock — Selected Values (a)

Growth Yield	3% (c)	4%	5%	6%	7%	8%
Growth Period (Years)			Rate of Growth 3%			
0 (b)	$ 33.33	$ 25.00	$20.00	$16.67	$14.25	$12.50
5	38.23	28.65	22.71	18.97	16.25	14.20
10	43.21	32.17	25.31	21.00	17.84	15.56
15	48.19	35.51	27.65	22.77	19.20	16.61
20	53.17	38.68	29.79	24.29	20.38	17.45
25	58.14	41.71	31.70	25.62	21.30	18.12
35	68.08	47.35	35.00	27.73	22.69	19.04
50	82.94	54.85	38.79	29.92	23.98	19.82
			Rate of Growth 4%			
5	$ 40.04	$ 29.99	$23.75	$19.83	$16.96	$14.81
10	47.12	34.99	27.44	22.71	19.30	16.74
15	54.59	39.98	30.97	25.35	21.34	18.33
20	62.41	44.98	34.30	27.75	23.09	19.64
25	70.61	49.97	37.47	29.92	24.61	20.73
35	88.23	59.96	43.31	33.66	27.08	22.38
50	117.99	74.93	50.86	38.03	29.63	23.93
			Rate of Growth 5%			
5	$ 41.88	$ 31.33	$24.81	$20.69	$17.68	$15.45
10	51.39	38.05	29.75	24.57	20.80	18.02
15	61.83	45.04	34.68	28.23	23.62	20.24
20	73.35	52.40	39.60	31.73	26.15	22.11
25	86.01	60.10	44.49	35.05	28.45	23.85
35	115.26	76.67	54.16	41.18	32.41	26.57
50	171.01	104.67	68.26	49.15	36.99	29.43

(a) The values in the growth tables are prepared by a formula and computational routine different from the very time consuming procedure illustrated in Table I. Even with "short cut" methods the computations are surprisingly time consuming. All values are based upon a $1 dividend at the beginning of the first year.

(b) 0 years of growth gives the same result as the traditional current dividend yield computation. This same line and same set of values could be repeated for the 4% and 5% growth tables.

(c) The growth values are selected and reproduced from "Growth Yield Tables For Common Stock" copywrited by Robert M. Soldofsky.

Table III

Prices Which Give Constant Growth Yields*
(Assuming 10 and 20-year growth periods)

Rate of Dividend Growth	10-Year Growth Period Growth Yield		20-Year Growth Period Growth Yield	
	4%	5%	4%	5%
0%	$25.00	$20.00	$25.00	$20.00
2	29.00	23.33	32.63	25.93
3	31.51	25.31	37.81	29.79
4	34.26	27.44	43.92	34.30
5	37.26	29.75	51.11	39.60
6	40.48	32.25	59.59	45.82
7	43.98	34.95	69.56	53.06
8	47.79	37.89	81.31	61.67

*All values in the table are based upon a $1.00 dividend at the beginning of the first year. Also see notes to Table II.

rate of growth of dividends and the period that the growth is most likely to continue. The Analyst must now specify these two variables on the basis of available information and his projection of future dividends.

Assume that a well-known common stock is selling for $15.50 per share and paying $1 per year in dividends; furthermore, it is expected that the dividends will rise at the rate of 4% for 15 years and will stabilize thereafter. Under these conditions as shown in *Table I* the true rate of return is virtually 9%, not 6.3% as determined by dividing $1 by $15.50. The growth yield is that rate of interest (discount) which equates the rising stream of dividends with the market price of the stock. Earnings growth yield may be computed by the same method and stated in terms of its reciprocal, the price-earnings ratio.

The growth yield of 9% illustrated in *Table I* is a true compound rate of interest that is developed on the basis of the same fundamental concept as the yield to maturity on a bond; this concept is *present value* as the term is used in the mathematics of finance. With the aid of growth yield tables the hypothetical rapid growth stock, the medium growth stock, and the utility stock may be precisely compared with one another in terms of dividend yields if the Analyst specifies growth rates and growth periods. The growth yields may be strictly compared with the yield to maturity on a bond because both rates are computed on the basis of the same concept.

Pay-off periods are sometimes recommended as a basis for discriminating between growth stocks. When this technique is used the Analyst is required to specify the rate of growth of dividends for the securities under consideration. The rising stream of annual dividends is totaled and the number of years required until this rising accumulation of dividends is equal to the purchase rise is noted. The number of years to pay-off is compared for various stocks and the one with the shortest pay-off period is the "best buy," other things being equal.

The major problem here is that the pay-off period is not a rate of return concept. Dividend yields cannot be specified and compared directly with one another or with bond yields. For the same general reasons that the discounted cash-flows method is strongly recommended for corporate managers in evaluating alternative investment opportunities rather than the more widely used pay-off criteria, the growth yield concept is greatly superior to the pay-off criteria in evaluating alternative purchases (or holdings) of securities. The growth yield and discounted cash-flows concepts are both present value methods that result in true rates of interest or discount. The pay-off period measures only the *amount* of cash flow. It may be useful in discriminating between alternatives when the future is extremely uncertain; when availability of cash is a paramount concern; or when alternatives are otherwise acceptable on rate of return criteria.

One method of computing the growth yield has been illustrated, and reasons for superiority of the growth yield as compared with the current dividend yield and the pay-off period have been reviewed. Growth yield tables will now be illustrated and the limitations of the growth yield technique will be discussed. Finally, the growth yield concept will be used to restate the spread between bond and stock yields.

Table II is abstracted from Growth Yield Tables. Only a limited number of items are reported, but these may be sufficient to indicate some of the uses of such tables. In *Table II,* the rate of growth of dividends is specified for a selected set of numbers and the effects of different growth periods and discount rates are noted. All figures in these tables are based upon a $1 dividend at the beginning of the first year so adjustments may easily be made in terms of any actual payment.

If the market price of a share is $20 and the dividend is $1, and not expected to rise, the yield is 5%. If dividends are expected to rise on the average at 4% per year for the next five years and remain constant thereafter at the level of $1.17 per share (which will be reached at the end of that period), and if the stock were purchased at $23.75, the growth yield would be 5%.

If the rate of growth is again taken as 4%, the growth period extended to 10 years, and if the market price is $27.44, the growth yield would still be 5%. In other words, $7.44 ($27.44 — $20.00) more could be paid for a stock whose dividends were expected to rise at the rate of 4% per year for 10 years than indicated on a current yield basis and the yield would still be a true 5% return. The relationships between the growth period, dividend growth rate, and market prices that will yield a given rate of return, may be observed in any column in *Table II*.

Given the rate of growth and the period of growth, it is instructive to observe the market prices for a series of growth yields. For example, if the rate of growth of dividends of 4% is selected again and the growth horizon is held constant at 20 years, the following figures may be read out of growth tables:

Market Price	Growth Yield
$96.29*	2%
76.23*	2½
62.41*	3
52.44*	3½
43.92	4
$34.30	5%
27.75	6
23.09	7
19.64	8
17.01	9
14.95	10

*These prices are based on a 200-year dividend stream. The rest of the prices are based on 100-year dividend streams.

The materials in growth tables may be arranged so that the effect of different rates of growth may be observed. Thus, assume that the growth horizon and the growth yield are fixed and observe how the market price will vary with changes in the rate of growth of dividends. A few figures drawn from growth tables arranged to highlight the effect of different rates of growth are given in *Table III*. Given the growth period, successive increases of 1% in the dividend growth rate have successively larger impacts on the amount that will result in a given growth yield. The longer the growth period, the greater also is the effect of a given increase in the rate of dividend growth.

Growth yields may also be of interest in evaluating the spectacular prices of individual stocks. For example, say a certain stock that is selling for $143 and paid a $1 dividend last year; its dividends are expected to grow at the rate of 5% per year. The current yield, is 0.70%. If the dividends are expected to rise steadily at a rate close to 5% per year for 75 years, the growth yield would be 4%!

The growth yield concept has many limitations; one is that no adjustment has been made for the price appreciation of shares. It was suggested at the outset that such computations can be made with a little more work on the Analyst's part. Many individuals may point out that projections of dividends are required for the growth yield method and none are required by the current yield method. After a little reflection, however, it should be clear that in buying a stock or any other investment, that a projection of the future income is essential. The current dividend yield and the price-earnings ratio imply that present dividends and earnings will continue indefinitely into the future. Another serious criticism of the growth yield technique is that it requires the Analyst to specify the rate of growth and the period of growth.

No one has knowledge of this sort and the nature of things is such that no one can have certain knowledge of the future. This criticism may be turned about and the objector may ask whether a projection of the present per share dividend or a rising dividend per share for some period of time will more nearly represent the picture of his anticipations. The answer will probably be the latter, the rising dividend payment. The Analyst's problem is to specify the future dividend pattern as best he can on the basis of his knowledge of the past and his skill at economic and political analysis. For most well-known stocks of large established companies an Analyst is very likely to have more confidence in his projection of a specific rising dividend stream than a constant dividend stream.

The confidence that the Analyst has in his projection will depend upon the particular company and industry with which he is concerned. The approximate rates of growth of dividends of the stocks included in the Dow Jones series for three periods of time have been as follows:

	1929-1959	1939-1959	1947-1959
30 Industrials	1.62%	6.25%	7.0%
15 Public Utilities	—	7.2*	4.7
20 Rails	0.52	8.6	7.2

*Since 1945, the earliest date for which information is available.

Admittedly, the growth of dividends of some companies and industries has been more erratic than others. Another problem in using growth rates based upon the past is the fact that accounting techniques used in preparing net income have not been consistent. New policies adopted for accounting for inventory and depreciation are the two best known and probably most important illustrations of changing accounting practices that have affected reported net income. Most large manufacturing companies, including those now in Dow Jones lists, have been adopting the Last-In, First-Out basis of accounting for inventory since this method was authorized for tax purposes in 1939. Several companies among the Dow Jones Industrials adopted LIFO in the 1950's. The 1954 Internal Revenue Code authorized the sum-of-years digits and declining balances for large corporations. Both of the techniques mentioned generally have the effect of reducing reported net income as compared with the method that had previously been used.

In the growth tables the projected dividends have been discounted at one uniform rate. This practice is consistent with the construction of Bond Tables and the interpretation of the current yield formula as the latter has been widely used. An Analyst may consider that his dividend projection is a probability distribution of possible results and make no further adjustments. Other Analysts may use the growth yield as a first step and handicap their results for the degree of confidence they have in their projects. Professor Clendenin has also constructed brief growth yield tables, but he has discounted different parts of the projected dividend stream at different rates. Professor Clendenin uses three different discount rates, and dividends more distant in time are discounted at arbitrarily selected higher discount rates.

One minor problem is the matter of interpolation. In the completed tables that have been copywrited by this author, the market values are a maximum of about $5 apart at the 20-year growth horizon. Even though interpolations between successive prices in the tables should be made along the curve rather than along a straight line, any very small errors in growth yields that are the result of straight line interpolation between successive figures in the growth tables can be disregarded given the nature of the projections of the dividend stream. Very minor computational errors arising from straight line interpolation will not influence the decisions made with the aid of the growth yield tables.

The Analyst may believe that for some growth companies a higher rate of growth will prevail during the more immediate years than for more distant years. Growth yields for such cases are worthwhile, but they are too complex to warrant the preparation of tables by any hand tabulating technique. A computer program has been developed for obtaining growth yields in these more complex cases.

The spread between the current dividend yield on Dow Jones Industrials and Barron's highest grade bonds

ELECTRIC
BOND AND SHARE
COMPANY
New York, N. Y.

Notice of Dividend

The Board of Directors has declared a quarterly dividend of thirty cents (30¢) a share on the Common Stock, payable September 29, 1961, to shareowners of record at the close of business on September 8, 1961.

B. M. BETSCH,
Secretary and Treasurer

August 24, 1961.

AIR REDUCTION
Company, Incorporated

AIRCO 177th CONSECUTIVE
COMMON STOCK DIVIDEND

The Board of Directors has declared a regular quarterly dividend of 62½¢ per share on the Common Stock of the Company, payable on September 5, 1961, to holders of record on August 18, 1961.

July 26, 1961.

T. S. O'BRIEN, *Secretary*

MINNEAPOLIS GAS
COMPANY
739 Marquette Avenue
Minneapolis 2, Minnesota

Common Stock Dividend

The Board of Directors of Minneapolis Gas Company, at a meeting held on July 13, 1961, declared a dividend of 40 cents per share payable in cash on August 10, 1961, to common stockholders of record as of the close of business July 27, 1961.

G. T. MULLIN, President

is one measure of the "highness" or reasonableness of prices on the stock market. Since the great breakthrough of September, 1958, the bond yield has been above the current dividend yield on the Dow Jones Industrials. At times the spread has been as much as 1.6% in favor of bonds. Why buy or hold common stocks under these circumstances? Each individual can give any array of answers, but generally they believe that their return from shares will be sufficiently higher than the bond yield to compensate them for the added risks of owning shares. Because of the way the spread is computed this higher dividend rate is not reflected in the spread.

The true dividend yield on the Dow Jones Industrials is understated because no consideration is given to the probable future growth of these dividends. If it is assumed, for example, that the dividends on the Dow Jones Industrials will rise on the average at 6.25% per year for the next 15 years, the growth yield will be approximately 6.4% when the *average* is at 600.

If the growth period is taken to be 25 years, the growth yield will be about 7% with the *average* at 630. If dividends grow at 6.25% for the 15 years and at 3% for the following 10 years the growth rate will again be approximately 7% when the *average* is at 608. On the basis of the application of the growth yield concept it is clear that the spread is between the yield on Barron's high grade bonds and the Dow Jones Industrials is at least 2.00 percentage points in favor of the Industrials.

Institutional investors such as mutual funds, pension fund trustees, and insurance companies, are especially interested in the long-term yield they can expect from securities. The "current" dividend yield (the current dividend divided by the market price) does not give much of a clue as to what dividend yield may be expected over a period of 10, 20, 30 or more years when dividends are expected to rise in the future. Pension costs from the employer's point of view are related to the long run dividend yield, that is the growth yield. The appraisal of variable annuities as compared with the traditional fixed dollar annuities depends in large part upon the differences between yields on fixed income securities and the growth yield on common stocks.

Incidentally, the rate of return on the variable annuity, CREF (College Retirement Equities Fund), from the time it began operations, in July 1952 through December 1960, is 14%. Administrators of university endowment funds are extremely interested in the long-run yield on common stocks in making investment decisions. Each investor is likely to have one or more investment objectives for which the use of growth yields will be exceedingly helpful.

Growth yields are relatively simple to use. They should be of considerable interest in appraising individual stocks as well as the general level of stocks.

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sk ***standard kollsman*** **INDUSTRIES INC.** *2085 N. Hawthorne Ave., Melrose Park, Ill.*

Report for the six months ended June 30, 1961

To our Stockholders:

For the six months ended June 30, 1961, our net sales amounted to $51,745,707. For the similar period in 1960, net sales were $45,329,044.

Consolidated net income for these first six months amounted to $1,615,967, or 77¢ per common share on the 2,086,891 shares outstanding. For the same period in the prior year, net income was $1,377,714, or 66¢ per share based on the same number of shares. As was predicted in the annual report for 1960, these results amount to a 14% increase in sales and a 17% increase in net income for the first half of 1961, compared with the similar six months in 1960.

It is particularly satisfying to note that we were able to show an improvement in earnings during this six-month period despite the fact that we had substantial tooling and starting-up expenses in both the Tuner and Casco Divisions. Two new tuners went into production in the second quarter, for which there is considerable demand and which should permit us to increase sales and improve our penetration of the tuner market.

In May, our Casco Division first introduced its complete line of "Lady Casco" products on a direct-to-dealer basis. The reception which this pioneering merchandising concept and these products have met across the country has been most encouraging. During the next six months, "Lady Casco" products will be increasingly displayed and advertised in newspapers throughout the nation and there should be a consequent growth in its sales.

Recently, our Kollsman Instrument subsidiary was selected to build an important portion of the attitude stabilization and control system for the United States' first Orbiting Astronomical Observatory spacecraft. Receiving this contract represents a major breakthrough for Kollsman in the application of its star tracking systems to space vehicles which heretofore have been used on airplanes and missiles. There will be six Kollsman star trackers on each such spacecraft and their function will be to keep the vehicle's telescope pointed at a predetermined star, sun or planet.

I am pleased to call your attention to the July issue of *Fortune Magazine* which contains its directory and rating of the 500 largest industrial corporations. Our company is listed as the 406th industrial company for the calendar year 1960, as compared with 489th for the prior year, based upon sales volume; as far as number of employees is concerned, we ranked 282nd. We feel, however, that the best illustration of capable management is the relationship of profits to invested capital. In this respect, our company numbered 45th in the nation in the Fortune Directory of the 500 largest industrial corporations.

August, 1961

J. O Burke
President

Comparative Statement of Six Months Ended June 30

	1961	1960	1959
Sales	$51,745,707	$45,329,044	$35,221,567
Earnings before Federal Taxes	3,317,371	2,887,064	1,155,103
Federal Income Taxes	1,701,404	1,509,350	515,400
Net Income	1,615,967	1,377,714	639,703
Per-share net income*	$0.77	$0.66	$0.30

*Based on 2,086,891 shares outstanding June 30, 1961.

Diversified electronics products *Celestial guidance and navigation systems • Television tuners • Semiconductor materials • Synchronous motors • Aircraft instruments • Electrical rectifiers • Electronics and electrical products for home, defense and industry*

Forecast for energy:

Millions of new cars will help boost America's demand for energy twice as high by 1980

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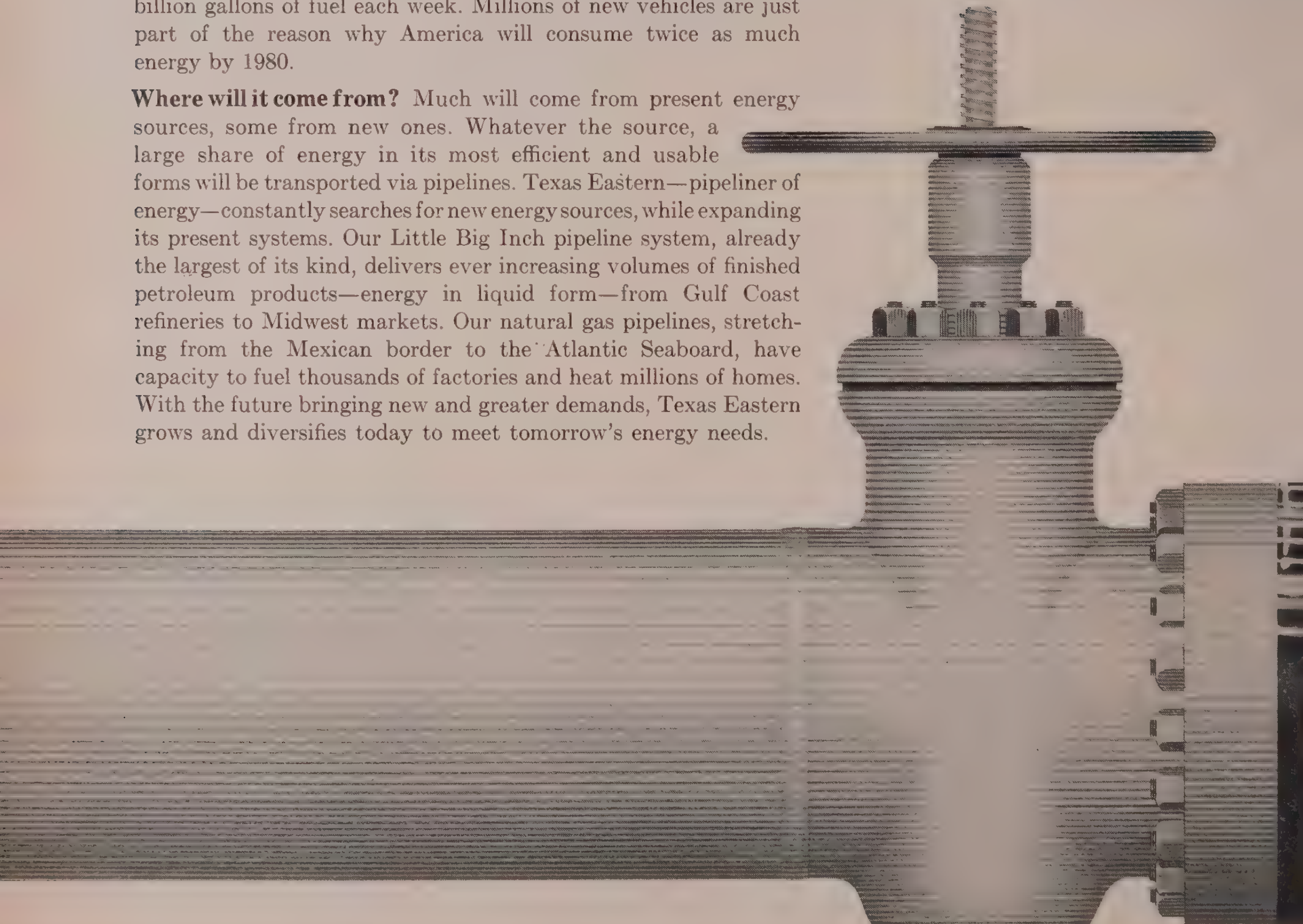

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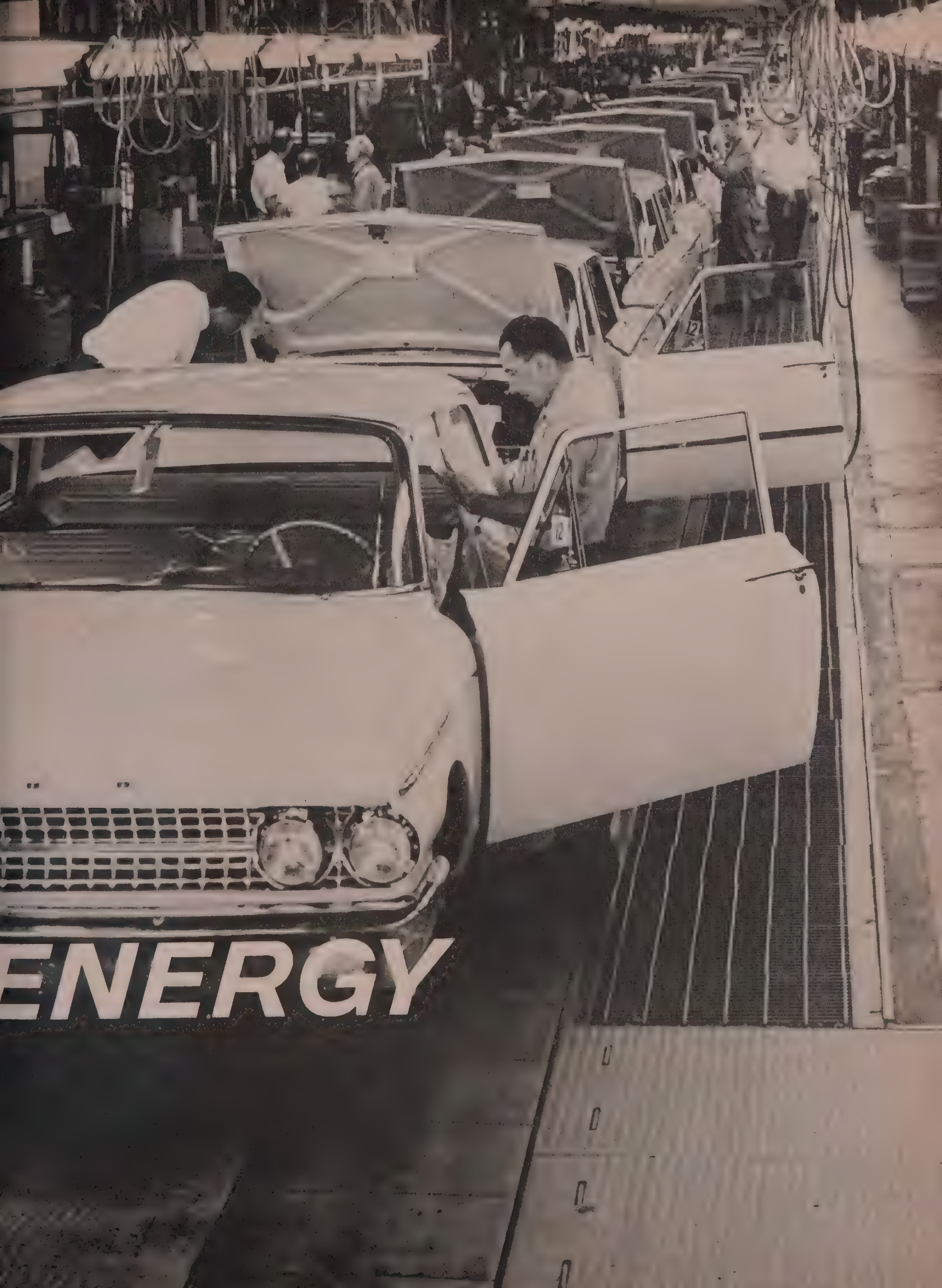

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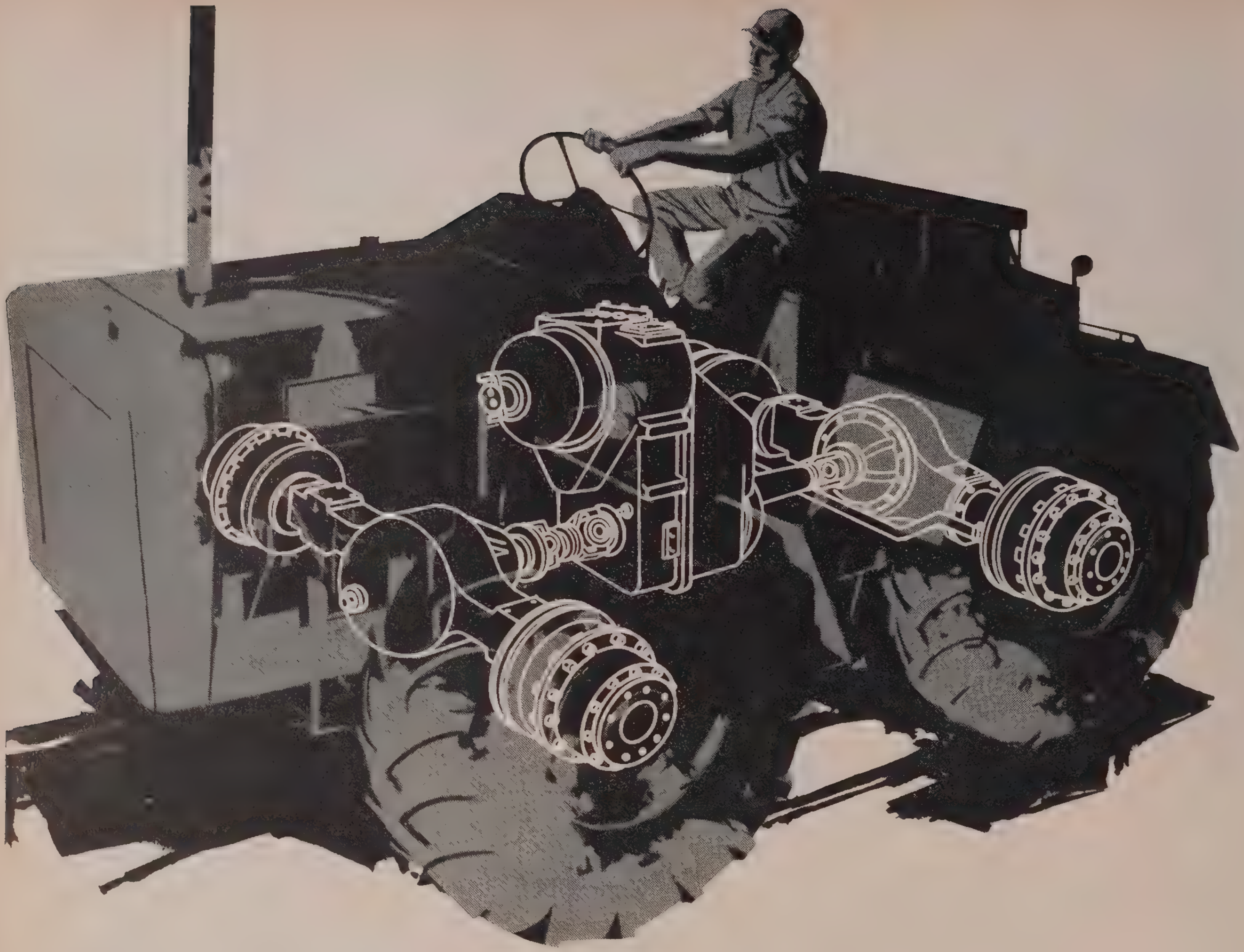

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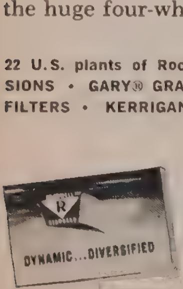

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Investment Company Performance

Management Performance More Valid Than Investor Experience

by Michael Ball

In recent months a number of articles have appeared in various publications on the subject of investment company performance. One of the most detailed studies was that made by Messrs. Wayne P. Hochmuth and Arthur S. Bowes, Jr. This study was published in a two-part article in the *Financial Analysts Journal* earlier this year under the title "Investment Companies: Performances vs. Charges."

In Part I of this article the authors referred to earlier studies published on the subject of investment company performance. They were of the opinion that few of these studies " . . . have comprehensively delved into the limitations inherent in the methods currently used to measure performance . . ." and that ". . . none has adequately grappled with the problem involved in measuring performance from the investor's viewpoint." The article then dealt in detail with the problems that the authors felt existed in such an evaluation of performance. These included: (1) purchasing and closing charges; (2) Federal income and capital gains taxes; (3) re-investment assumptions; (4) intercompany yardsticks; (5) time periods; and (6) external yardsticks. In the course of this detailed analysis, the authors noted that some of the various financial service organizations that regularly publish performance statistics effectively ignore purchasing and closing charges, do not take into account Federal income and capital gains taxes, and use differing methods of computation for open-end and closed-end investment companies.

Part II of this article advanced a refined method of computing performance from the investor's viewpoint, and used this method to compute performance figures for several leading open-end and closed-end companies. The results led the authors to conclude, among other things, that:

(1) ". . . the better closed-end investment companies have significantly and consistently out performed both the better-known mutuals and the hypothetical Dow-Jones Fixed Trust."

And (2) ". . . consideration of past results would tend to make the authors lean toward an investment in a closed-end investment company."

Messrs. Hochmuth and Bowes have been constructive in pointing out and analyzing some of the factors which the potential investor should consider when selecting an investment company best suited to his needs. However, while this study, and the results obtained, are of considerable technical interest, the proposed method of computing performance and the conclusions drawn therefrom appear of questionable value to the potential investor. Instead of clarifying the problems facing him and simplifying his selection, they could well confuse, complicate and, in fact, mislead him. Moreover, the overall approach seems to have overlooked many of the important factors that warrant consideration and to have laid undue emphasis on quantitative analysis at the expense of qualitative.

This article will endeavor to indicate some of the dangers inherent in the method of computation advocated by Messrs. Hochmuth and Bowes. In addition, an effort will be made to examine the other factors, primarily qualitative, which the writer feels should be considered by the potential investor in an investment company and to indicate where performance fits into the overall picture. Finally an alternative method of computing performance will be suggested and the limitations on the significance and use of performance figures will be studied.

Various Measures Of Investment Company Performance

The rapid growth in the volume of investment dollars entrusted to the care of investment company managements, coupled with the steadily increasing number of investment companies in existence, has made it desirable that some form of measurement be evolved to gauge the degree of success of professional management. In fact, as Messrs. Hochmuth and Bowes pointed out, several forms of measurement have been evolved. A number of financial service organizations regularly publish statistics on investment company performance. But the differing methods used by these organizations naturally produce somewhat differing results. This understandably leads to some confusion. However, the confusion exists because the different methods of measurement are not different methods at all, but are, in reality, different measurements. When the statistics published by one organization are at variance with those of another, it is usually because each organization is measuring something different, even though both may apply the term "Investment Company Performance" to their results.

Messrs. Hochmuth and Bowes were concerned with the problem involved in measuring investment company

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Michael Ball, Financial Analyst with Arthur Wiesenberger & Company, is an Englishman who joined that firm in 1959 after a number of years as a Financial Analyst in London. In the past two years he has been largely concerned with the publication of Wiesenberger's annual "Investment Companies," a book, considered the definitive work in its field.

performance "from the investor's viewpoint." However, such a measure might be more correctly regarded as a measure of *investor experience*. Naturally in computing this measurement the authors were vitally concerned with factors such as purchasing and closing charges, Federal income and capital gains taxes, and reinvestment assumptions. The omission of these factors by some of the organizations computing performance data thus appeared serious. However, having noted these omissions, the authors do not appear to have questioned why this should be. This seems to do the services less than justice.

It is highly probable, that the various financial services, which have studied the subject of investment companies in detail for many years, are well aware of these factors but have rejected them as being irrelevant to their measurement of investment company performance. For the majority of these measurements have been designed to show how well management handled the funds entrusted to it for investment, in line with the stated objectives of the company. Obviously sales charges and the taxes payable by the investor have no bearing on what management accomplished.

There is probably general agreement that the major reason for computing investment company performance is to provide an aid to the potential investor. The value of the measurement should therefore be judged in this light. People invest their money in an investment company for a number of reasons, one of which is that they hope that professional management will have a greater degree of success than they themselves would have. (Some of the other reasons will be discussed later in this article). Thus, while past results are no indication of what may happen in the future, the potential investor is interested in the past performance of investment companies as a guide to the calibre of management.

The various reasons for investing in an investment company are all open to qualitative analysis. But the past success or otherwise of management is one of the considerations which is also subjective to quantitative analysis. For this reason considerable emphasis is often placed on performance statistics, to a greater degree than is sometimes warranted. Consequently, it seems highly important that a measurement of past performance be designed so that it is of the greatest value to the potential investor and is accurate in its conception as well as its computation.

Calibre of Management Performance

The many factors that an investor should take into consideration when selecting an investment company are readily available in investment companies' own publications such as prospectuses, annual reports, etc. All, that is except one—the calibre of management. It is this aspect of an investment company's operations, therefore, upon which the investor needs guidance. A measure of investment company performance should therefore be aimed at providing, in quantitative form, a guide to the past performance of *management*. It also seems implicit in this requirement that the measure should not reflect factors other than the performance of management.

'Death in the Afternoon' Not Feared By International Smart Money Set

The international smart money set is reportedly pouring dollars, francs (French and Swiss), lira, guilders, pounds and marks into Spanish securities. And apparently with no fear of "death in the afternoon"; i.e., that Dictator Franco won't suddenly confiscate foreign funds.

Also, Spanish investment funds are growing more popular. Merrill Lynch, Pierce, Fenner & Smith recently opened an office in Madrid. Carl Marks & Co. acts as a Spanish broker. Arthur Wiesenberger states that Spain currently offers the greatest investment opportunity in Europe. However, Model, Roland & Stone, another brokerage house particularly conversant with Spanish finance, advises extreme caution in direct trading on the three Spanish stock exchanges—located in Madrid, Barcelona and Bilbao. A few top Spanish banks reportedly are in control.

It is from this aspect that some measures of performance are found lacking, and, because they reflect the interaction of factors other than the performance of management, lose much of their value to the potential investor and can, in fact, mislead him. Investment company performance from the investor's viewpoint, or *investor experience* is, in the opinion of the writer, one of these measures.

INVESTOR EXPERIENCE—A BIASED STATISTIC

A measure of performance from the investor's viewpoint is, in effect, measuring the total benefits that the investor actually received over a period of time. It is primarily based on the difference between the amount of money originally invested, and the amounts received back by the investor at the end of a given period, plus those received during the period. In the case of a mutual fund, therefore, the basic figures used are the total initial outlay by the investor (this includes sales charges, if any) and the final receipts by the investor (which reflects redemption charges, if any). In the case of a closed-end fund, the initial outlay reflects the market price of the stock plus brokerage charges, and the final receipts reflect the market price of the stock at that time, less brokerage charges. The difference between these initial and final figures is adjusted to reflect the receipt of income dividends and capital gains distributions during the intervening period, and the taxes thereon applicable to the particular investor. Alternatively, if all distributions are assumed to be reinvested, the necessary adjustments are made, including those for taxes.

A measure calculated in this way will truly represent the actual experience of the investor. It will also reflect the success or otherwise of the investment company's management. But, in addition, the measure will reflect the interaction of a number of other factors, all of which affect the experience of the investor, but are quite outside the province of management. These factors include the level of sales and redemption charges, if any; brokerage commissions; tax rates assumed to be applicable to each investor; and the terms of reinvestment of distributions, if reinvestment is assumed. Moreover, in the case of a closed-end investment company, the measurement will reflect the widening or narrowing of the discount, or perhaps even the movement of the stock to a premium, and the effect of capital leverage, if any, in the corporate structure.

The potential investor, seeking guidance as to the calibre of management, is therefore at a considerable disadvantage when provided with this measure. He has little way of knowing whether a comparatively good performance has been due to the ability of management or the favorable effects of other factors. Similarly, a seemingly poor performance may well have been due to the adverse effect of other factors which outweighed a good performance by management.

Effect of Leverage And Varying Discounts

While these criticisms apply to the measurement of performance for both mutual and closed-end investment companies, they have particular force in the latter case. For example, the method of computation used by Messrs. Hochmuth & Bowes produced outstanding results for two closed-end companies, U. S. & Foreign Securities Corporation and Tri-Continental Corporation over successive 10-year periods from 1942 to 1960. But these results, outstanding as they were from the investor's point of view, are of little assistance in gauging the success of the respective managements during those periods. This is because the results reflected a substantial magnification of actual management performance by the favorable action of two other factors, namely capital leverage and narrowing discounts.

Messrs. Hochmuth and Bowes included the results of one other closed-end investment company in their study, namely those of Lehman Corporation. They stated: "Although Lehman was not among the top three performers, it has been included to illustrate the results achieved by a company which was unleveraged for the entire period under consideration." It is interesting to note that the results shown for Lehman in that study were quite similar to those of the three open-end investment companes mentioned. This emphasizes the dramatic effect that capital leverage had in raising the leveraged closed-end companies to the top of the performance scale *as computed by Messrs. Hochmuth and Bowes.*

Take the case of Tri-Continental. On January 1, 1942, Tri-Continental's total assets amounted to $24 million while assets applicable to the common stock totalled $174,000. Per share asset value of the common stock was 7¢ and Tri-Continental traded at the price of ¾. The leverage inherent in this situation was tremendous. Senior capital claims accounted for over 99% of the company's total assets. A 100% increase in the value of total assets was capable of generating an increase in per common share asset value of several 1,000%. This, in fact, happened in subsequent years. Between January 1942 and December 1951, Tri-Continental's assets increased by approximately 540%, but the asset value of the common stock rose no less than 3,600%, from 7¢ a share to $26.20. Thus even although the stock moved from a large premium in January 1942 to a 47% discount ten years later, the price still rose from ¾ to 13⅞, an increase of over 1,700%.

Without making any adjustment for dividends received during this period, it is clear that an already good performance by management was magnified three fold, in the 1,700% appreciation of the stock, through the existence of capital leverage. Consequently it appears unrealistic to regard this 1,700% increase as a measure of management's success alone during this period.

In the following nine years, from December 1951 to December 1960, the price of Tri-Continental common stock again benefited substantially from factors outside management's control. During this period, however, the effect of capital leverage was minor compared to the steady narrowing of the discount on the stock. Over these nine years per-share asset value increased by 88% from $26.20 to $49.15. But, at the end of 1951 the stock traded at a 47% discount from asset values, whereas nine years later the discount had narrowed to 23%. As a result the price of the stock rose 171%, over double the increase in asset value.

Again it appears incorrect to regard the price increase of the stock during the nine years, as a true reflection of management's success. It might, of course, be argued that the progressive narrowing of the discount should be credited to management, and to some extent this is perhaps true. A good management performance might well be reflected in improving investor sentiment and hence a narrowing of the discount. However, this factor is not a direct result of management's performance, and investor sentiment being what it is, there is no guarantee that the same action would be seen again in similar circumstances. There have, in fact, been a number of instances where discounts on closed-end investment company issues have widened while the respective managements were turning in above average performances. Moreover, during the past decade there has been a definite trend for discounts to narrow on the majority of closed-end issues. These stocks have received wider investor acceptance, as the downside risks stemming from high leverage have diminished with the reduction or elimination of senior capital.

In the case of U. S. & Foreign Securities Corporation, the existence of capital leverage (until its elimination in 1955), and narrowing discounts since 1946, have had an even more dramatic effect on the price of the stock than in the case of Tri-Continental. At the beginning of 1942, U. S. & Foreign had total assets of $27 million. With over 90% of this sum represented by senior capital claims, common stock equity amounted to $1.7 million and the asset value of the common stock was $1.67 per share. Five years later total assets had increased by 87% and senior capital claims represented only 30% of the total. As a result, per-share asset value of the common stock rose no less than 2,100% from $1.67 to $35.83. Even though the price of the stock moved from a 57% premium over asset value to a 47% discount, the rise in price from 2⅝ to 19⅛ still represented an increase of 630% versus the 87% increase in total assets. Subsequent to 1946 the discount on the stock steadily narrowed. This factor, together with the effect of leverage until 1955, produced a price rise of 298% between January 1947 and December 1960, while total assets rose 108% and per-share asset value of the common stock rose 164%.

It is evident that the actual performance of each of these two closed-end companies during the periods examined was greatly magnified by the favorable effect of capital leverage and the trend towards a narrowing of discounts. Past investor experience in these two stocks consequently appears of little value as a guide to the calibre of management, and is misleading to the potential investor. All performance figures (whichever way they may be calculated) should be recognized as reflecting past performance and are no indication of what may happen in the future. But the computation of "investor experience" produces results that, in addition to being no indication of what may happen in the future, could not possibly be repeated unless several unjustified assumptions are made.

Firstly, the gratifying gains in earlier years, experienced by shareholders of Tri-Continental and U. S. & Foreign Securities, as a result of high capital leverage, were of a once-and-for-all nature. U. S. & Foreign Securities now has no capital leverage, and hasn't had since 1955. Tri-Continental's capital leverage at present is almost eliminated since portfolio holdings of senior securities almost balance Tri's senior capital. Moreover, even if the latter company's portfolio consisted entirely of common stocks, leverage would still be small. Thus, leverage benefits could not again be experienced unless the assumption is made that both companies will issue more senior capital. Similarly, gains sustained from the narrowing of discounts in the past could only be repeated if discounts continued to narrow or the stocks moved to premiums over their asset values. This also seems an untenable assumption.

Other Factors

Considerable emphasis has been placed on the pitfalls involved in the calculation of closed-end investment company performance because the effect of capital leverage and varying discounts can produce widely misleading results. However, other factors also, while relevant to a computation of "investor experience" are outside the control of management and therefore should not be reflected in a measure of management performance. These factors are common to both mutual funds and closed-end investment companies.

Sales charges and brokerage commissions are examples. Sales charges on mutual funds vary. Some funds have no sales loading; others differ in the rate of the sales charge included in the prices of their shares. Moreover, effective rates vary according to the dollar value of the purchases made. Similarly brokerage commissions on purchases and sales of closed-end company shares vary according to the price of the stock.

The taxes payable on investment company distributions, both income dividends and capital gains payments, are another factor. Tax rates vary widely among different investors. Moreover, the taxes payable by any one investor over a period of time change according to his circumstances.

SELECTING AN INVESTMENT COMPANY

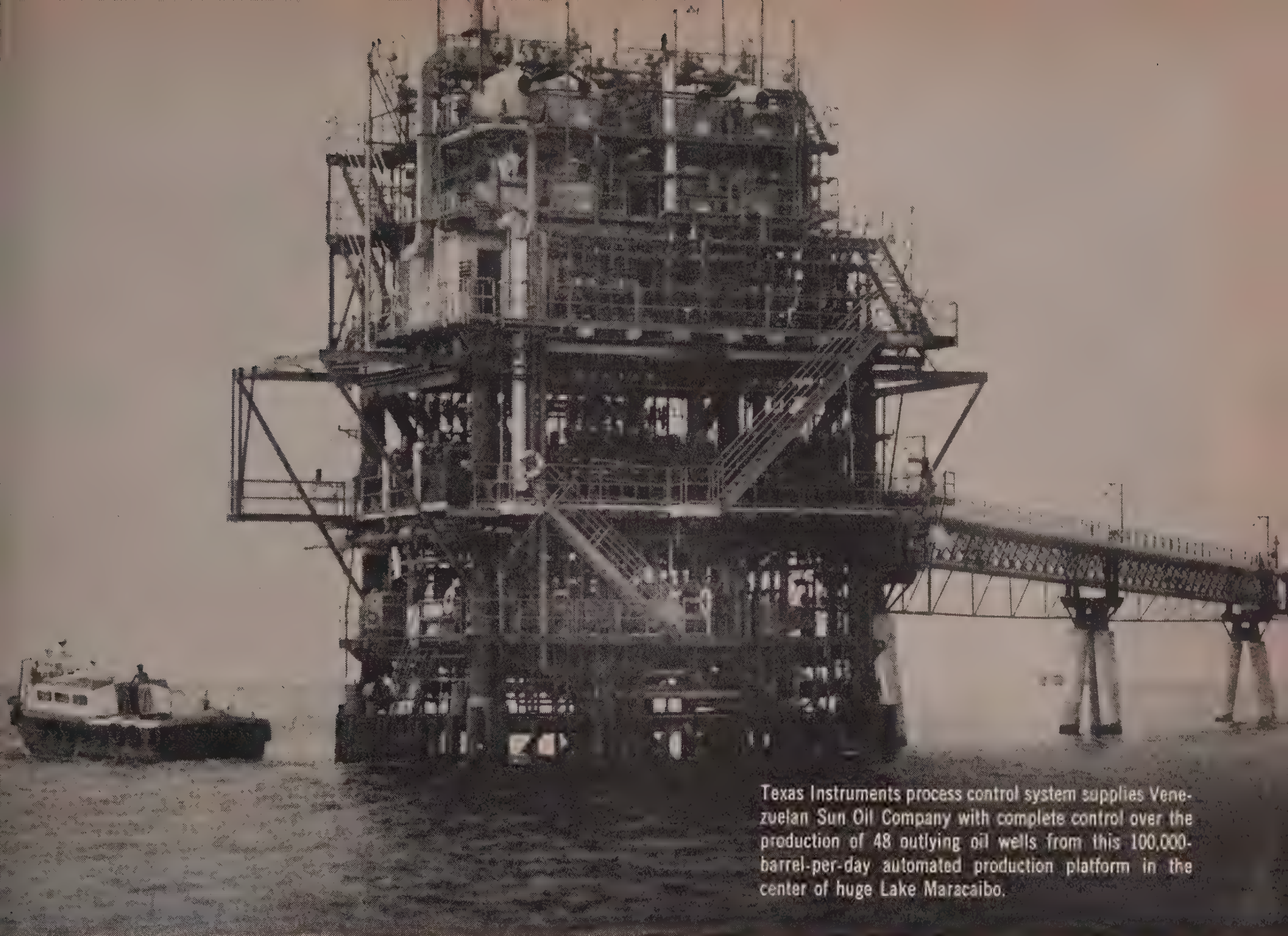
The disadvantages that exist in a measure of investment company performance "from the investor viewpoint" have been covered in some detail. It now seems appropriate to advance a method of computing performance which would seem to be of most value to the potential investor, namely one which measures the performance of management alone and does not reflect the action of other factors.

Before doing this, however, it is important to consider briefly how an investment company issue should be selected and where performance results in particular fit into the overall picture. In the writer's opinion, past performance should not be the sole nor even the paramount criterion in deciding which investment company best suits an investor's needs.

As has already been mentioned, one of the reasons why people invest in an investment company is that they hope that professional management will have a greater degree of success than they themselves would have. But there are also other reasons. The diversification of investment interest is an important consideration with many people. Convenience is another, and also marketability. Investment companies are far more than vehicles for maximum capital appreciation. Just as no engineer would measure the efficiency of an auto engine by calculating the speed of the car, so the efficiency of an investment company should not be based on performance alone.

Selection of investment company securities involves a number of considerations. It is unlikely that the investment company movement would have grown to be a $20 billion industry, representing the accumulated savings of millions of investors, if all investment companies were identical. They are not. Investors have a wide variety of different needs and objectives. Some require current income; others are looking for capital growth, and a third group may place first importance on relative capital stability. Many investors, of course, desire a combination of these objectives, but place varying degrees of emphasis on each. In the same way an investment company management must decide which particular investor requirement it will endeavor to fulfill.

Before crystallizing his own investment objective, the potential investor should carefully examine his whole



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financial position to make sure that he is ready to start an investment program. An individual should not consider investment until he has accumulated the necessary savings to provide an immediate cash reserve in case of emergency and has acquired adequate life insurance coverage commensurate with his commitments and responsibilities.

When these requirements have been met, the potential investor can take his first step in selecting an investment company by deciding which personal investment objective he seeks. Having done so, he should then ascertain which investment companies, because of their policies and objectives, are most likely to meet his needs. After narrowing his choice to a limited number of funds, he can then examine their records to see how close they have come to fulfilling their objectives. Among the factors (not necessarily in order of importance) to be considered are:

1. The past record of dividends.
2. The long-term trend of asset values, and the incidence of capital gains payments.
3. The composition of the portfolio—the different types of securities that management favors in pursuing its policies, and the extent of the risks involved.
4. The level of sales charges or, in the case of a closed-end company, brokerage commissions.
5. The various services provided—opportunities for reinvestment of capital gains distributions and income dividends and the availability of accumulative purchase plans.
6. Volatility—has the stock tended to move faster or slower than the market as a whole in the past?
7. In the case of a closed-end company, its capital structure (the degree of leverage provided by outstanding senior capital), the marketability of the stock, and current and historical discounts.
8. The appraisal of past management performance.

The examination of past management performance should probably be one of the final factors considered. For there would appear to be little advantage in a potential investor selecting an investment company solely on the basis of a first class performance, if that company failed in other important respects to meet his precise needs.

Suggested Methods Of Computing Management Performance

A satisfactory measure of management performance should be concerned only with the results that management achieved with the funds under its control. Other factors which fall outside the province of management should not be reflected in the computations. By its very nature, therefore, such a measurement will in no way represent the results that any individual investor would have experienced. It is a measure that can only be used for comparative purposes between different investment companies, and then only with a clear understanding of its significance and limitations.

Basically an investment company management endeavors to do two things with the funds under its control, to sustain and enhance their capital value and to produce an income from them. In carrying out these aims the management incurs expenses. Thus, the measurement of performance should reflect just these three factors: 1. Changes in capital values; 2. Investment income produced, and 3. Expenses incurred.

OPEN-END INVESTMENT COMPANIES

The most straight-forward method of computing annual performance results for open-end companies is on a per-share basis. The per-share income dividends and capital gains distributions paid out during the year are added to the asset value per share at the end of the year. The total is then divided by the asset value at the beginning of the year, and the result may be expressed as a relative with base 100. By subtracting 100 from this result, the percentage gain or loss for the year is obtained. This method reflects the three factors mentioned above. Changes in asset values, adjusted for capital gains payments, reflect the changes in capital values. The adjustment for income dividends reflects the income produced, less the expenses incurred.

An example of this calculation for Company X might be as follows:

Per-share asset value at year-end	$10.00
Plus per-share dividends and distributions	1.00
Total adjusted per-share asset value	$11.00
Per-share asset value at beginning of year	$ 9.00

$$\text{Performance Relative} = \frac{\$11.00}{\$\ 9.00} = 122.2\%$$

Therefore performance = 22.2% gain.

For periods of time longer than one year an adjustment must be made so that capital gains distributions do not distort the performance results. If the total capital gains paid out over a period of years were added to asset value at the end of the period, the effect would be as if management had held that much cash in the portfolio. To avoid this distortion it should be assumed that capital gains payments are reinvested in additional shares. In effect this is the same as if capital gains were retained. Thus, the subsequent performance of the portfolio as a whole also applies to the capital gains reinvested.

CLOSED-END INVESTMENT COMPANIES

Annual performance results for closed-end investment companies cannot always be computed in the same way as for open-end companies. Where a closed-end company has only a single class of common stock outstanding, and no changes in the capitalization occur during the year, there is no difficulty and the per-share method can be used. But the per-share method is not suitable where changes in per-share asset values have been affected by factors other than management performances. Such factors would include the existence of senior capital, imparting leverage, and changes in the capitalization through the issue of new securities or the repurchase of retirement of outstanding issues. Where these factors exist, it is necessary to compute performance by comparing changes in the total assets of the company. Adjustment should be made for the total (not the per-share) dividends and distributions paid and for any capitalization changes.

The performance calculation for Company Y might be as follows:

Total assets at year-end	$200,000,000
Plus total interest and dividends paid on all classes of capital	5,000,000
Plus half the cost of stock repurchased	500,000
Total adjusted assets at year-end	$205,500,000
Total assets at beginning of year	$170,000,000
Less half the cost of stock repurchased	500,000
Total adjusted assets at beginning of year	$169,500,000

Performance Relative

$$= \frac{\text{Total adjusted assets at beginning of year}}{\text{Total adjusted assets at year end}}$$

$$= \frac{\$205{,}500{,}000}{\$169{,}500{,}000} = 121.2\%$$

Therefore performance
= 21.2% gain.

Where a company has repurchased its own stock during the year, total assets have been reduced other than by market action. To compensate for this, half the cost of the stock repurchased has been added to assets at the end of the year and half deducted from assets at the beginning. A similar type of adjustment should be made when the company has received additional funds through an issue of stock.

For computing closed-end performance results over periods longer than one year, the method used for open-end companies is not suitable. Therefore the performance relatives obtained for successive individual years must be multiplied together. By subtracting 100 from the result the long-term performance figure is obtained. Use of this method, however, implies the reinvestment of all interest and income dividends as well as capital gains distributions, and therefore produces a compounding effect.

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Sept. 15, 1961
Declared:
July 27, 1961
Elmer F. Franz
Vice President & Treasurer
THE YALE & TOWNE MANUFACTURING CO.
Lock and Hardware Products since 1868
Materials Handling Equipment since 1875
Cash dividends paid every year since 1899

Comparing Performance Results

Because the methods of computing open-end and closed-end performance figures for periods longer than one year are necessarily different, the results cannot be directly compared. But, comparisons can be obtained if the long-term results for open-end companies are computed on the same basis as closed-end results, i.e., by taking the annual performance relatives and multiplying them together.

However, there are considerable limitations on the significance and use of performance data. Care should be taken in making comparisons, not only between open-end and closed-end investment companies, but among all investment companies.

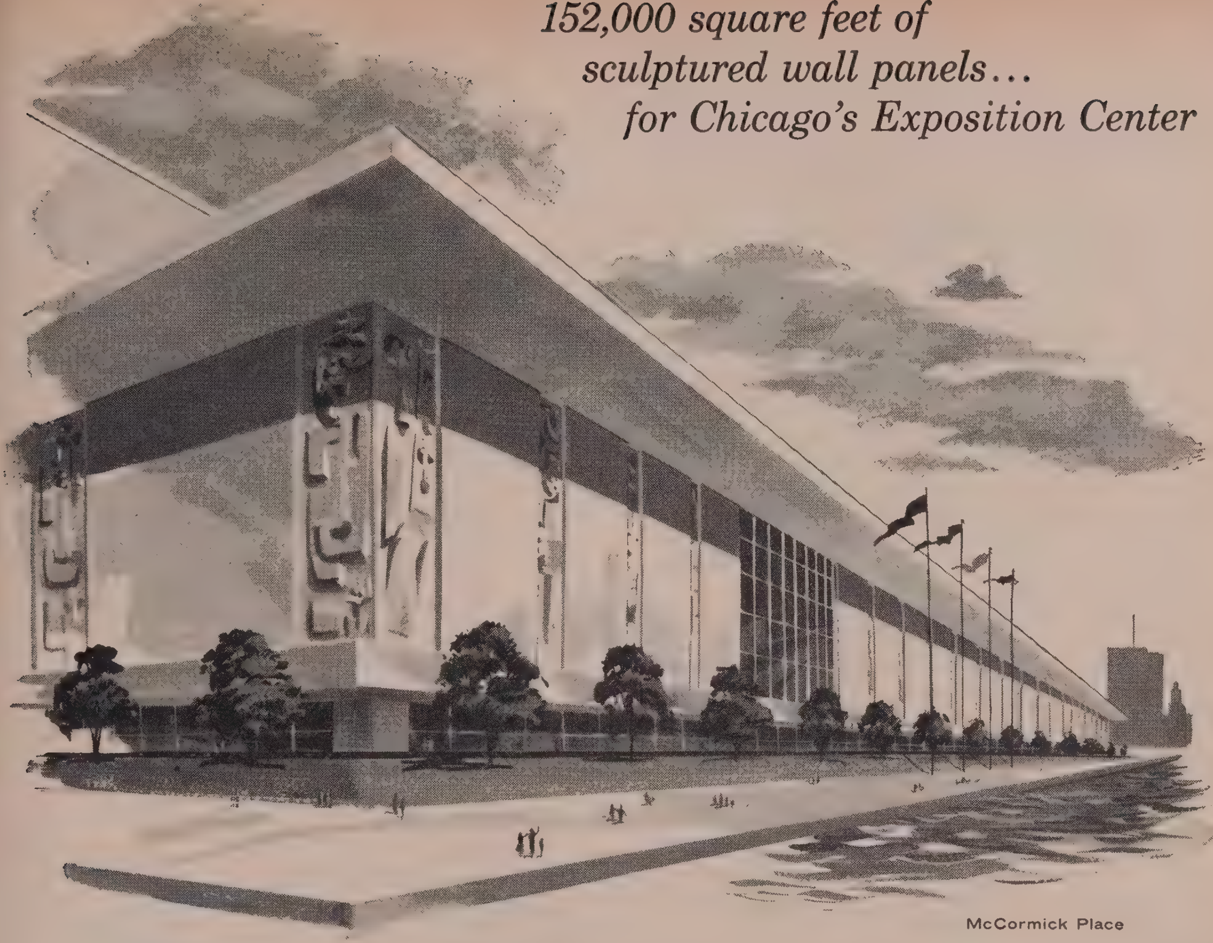
Comparative performance statistics only become significant when the potential investor has narrowed down his choice to a limited number of possible investment companies that fit in with his objective. Quite obviously investment companies with different policies and objectives can and should be expected to achieve varying results. A common stock fund, for example, which aims to provide the equity portion of an investor's overall investment program, should be expected to show different results than a balanced fund, which usually represents a complete investment program. Moreover, companies which represent different degrees of investment risk should not be compared. A fund with the objective of maximum capital growth, which follows a policy of investing in little known "glamour" issues, can be expected to turn in a widely different performance than a conservatively managed fund.

CONCLUSION

Probably no group is required by law to publish a fuller account of its activities than investment companies. Because of this there is a wealth of investment company information available to potential investors and a host of statistics suitable for comparative use. Yet, as with all comparisons, statistical or otherwise, it is essential that the original concept be correct and free from bias if the final results are to be meaningful and of value.

With investment company performance, the objective should be to measure the performance of management, and nothing else. The many other factors that, compounded with the performance of management, finally produce the "investor's experience" should be examined individually. Only if this is done can the potential investor obtain a valuable guide to the calibre of management. Having identified his needs with the objectives and policies of a number of companies, he is then in the best position to make his final selection.

152,000 square feet of
sculptured wall panels...
for Chicago's Exposition Center



McCormick Place

AMERICAN-MARIETTA

Concrete Products Division

Millions of visitors to Chicago's McCormick Place each year see and enjoy the lasting architectural beauty of the sculptured wall panels which are a major feature of the building's exterior.

These unique precast concrete panels, surpassing in total area any of the monumental art projects of ancient Egypt, were custom engineered and produced by American-Marietta's Concrete Products Division. Each massive 16 x 50 foot panel is made of eleven two and one-half ton sections.

Through American-Marietta research, there are now available to architects and structural engineers precast concrete wall panels of many textures, colors and designs . . . their use limited only by ingenuity and imagination. Produced under factory-controlled conditions, American-Marietta wall panels are trucked directly to the building site for quick installation.

This new American-Marietta concept in wall construction is another example of progress in building methods through the efficiency of precast concrete.

PAINTS • CHEMICAL COATINGS • SYNTHETIC RESINS
ADHESIVES • SEALANTS • METALLURGICAL PRODUCTS
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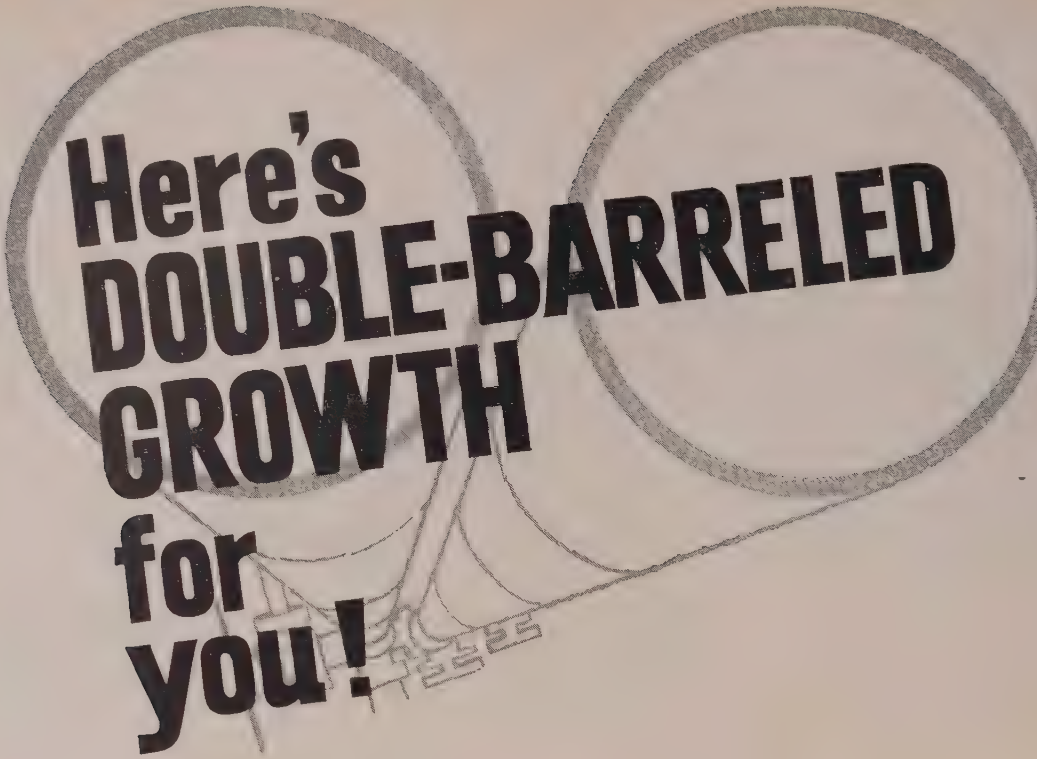
A=M

Progress through Research

American-Marietta
Company
Chicago 11, Illinois

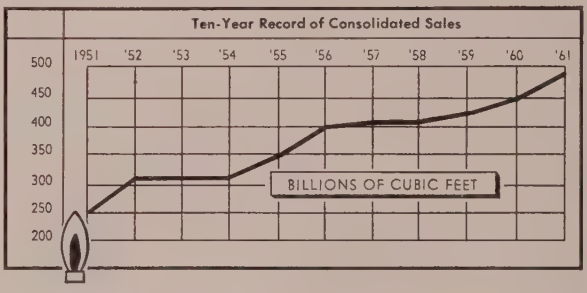


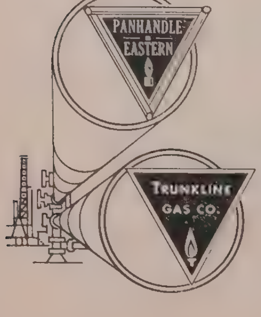
Here's DOUBLE-BARRELED GROWTH for you!

Growth is a continuing and well known American success story. Just as real, but even more striking, is the growth of the industry that fuels industrial progress — natural gas. Real . . . because the natural gas industry has doubled its sales in just a few years. Striking . . . because this dynamic performance has been achieved even during periods of slackening business activity.

Panhandle Eastern is part and parcel of the growth record in natural gas. As you read this, Panhandle and its subsidiary, Trunkline Gas Company, are working rapidly to increase system capacity by 420,000 MCF per day. This $125,000,000 expansion will bring total daily capacity to two billion cubic feet . . . more than double that of ten years ago.

The sales chart at the right shows the Panhandle—Trunkline System's growth over the past decade. All reliable indicators for the *next* ten years point to a population increase in our service area substantially *above* the national average. Small wonder Panhandle people are progressively busier, bringing industry in the nation's heartland the essential fuel to go on growing.





PANHANDLE EASTERN PIPE LINE COMPANY
120 Broadway, New York 5, N.Y.

Subsidiary:
TRUNKLINE GAS COMPANY
3000 Bissonnet, Houston 5, Texas

Stock Market Leading Indicators

by Robert W. Storer and Mabel V. Conn

THE YEARS OF WORK by the National Bureau of Economic Research and others, on leading, coincidental and lagging indicators of general business activity inevitably suggest as a corollary the application of similar techniques to the forecasting of stock market prices.

The work of the present authors in this area has been on a very simple basis, and one quite different from the well-known work of the N.B.E.R. and its commercial application by Statistical Indicator Associates of North Egremont, Massachusetts. We have not attempted to utilize a full battery of leading, coincidental and lagging indicators, but have used only leaders. We have not (at least, as yet) utilized such measures as the percentage rising or falling, the composite index-number values or the average length of run, valuable as any or all of these may ultimately prove to be in this connection.

Twelve Leading Business Indicators

Since stock prices, as measured by some index number, are themselves a leading indicator of general business, the business-leaders themselves are usable for our purpose at best only to the extent that they lead business by a longer interval than do stock prices. We have tested the twelve business-leading indicators presently in use by the N.B.E.R. and those used by the N.I.C.B. and have found only two that seemed satisfactory for our purpose. The series which we are currently using are eleven in number and represent—though not by calculated diversification—the sectors of (1) money and banking, (2) the stock market's own internal dynamics, and (3) general business. Following are the individual series used:

Money and Banking

- Ratio of Bank Investments to Bank Loans, Weekly Reporting Member Banks.
- Percent Change in Demand Deposits and Currency, from same month of prior year.
- *Net Free or Net Borrowed Reserves.
- *Ratio of Bank Debits to Bank Loans, excluding New York.

Stock Market Internal Dynamics

- *Average Daily Trading Volume.
- Customers' Free Credit Balances.
- Current Month to 46 Months' Moving Average Ratio Standard & Poor's 425 Industrials.
- Low-Priced to High Grade Common Stock Ratio.

General Business

- Average Hours Worked, seasonally adjusted.
- *Sales-Inventory Ratio, Durable Goods.
- *Reciprocal of Failure Liabilities.

*Three months' Moving Average, not centered.

The qualification must be added immediately that the above are the indicators being used for judging turning-points at the *peaks* of stock prices. Although several of these have been found applicable to the identification of market lows, it is as true in this application as it is in general business turning-points, that leads at tops are usually considerably longer than at lows. Seeing no reason for not using a two-platoon system, we look forward to having a somewhat different assortment of leaders at such time as the preoccupying problem will again be to time and place the future low point in stock prices. Unpublished work along these lines during 1960 was quite promising.

Our basis for selecting the individual leading indicators and the chief analytical approach thereafter, has consisted in relating the dates of downturns in the individual leader series, to the market circumstances, preceding and following, leading up to the stock market peaks. The work has attempted to answer the following general question: At the time when any individual leading indicator(s) or any given total number of indicators, have rather clearly turned down what is the probable number of months remaining for the stock rise, and what is the probable further percentage rise? What is the minimum expectation and the maximum expectation, based on the past?

The past which we selected as the basis of comparison and judgment, is six rising cycles of rising markets, as follows:

March	1926	to	August	1929
June	1932	"	February	1937
April	1942	"	May	1946
May	1949	"	December	1952
August	1953	"	July	1956
December	1957	"	July	1959

The stock price index used throughout was the Standard & Poor's 425 Industrials, month-end closing. The use of the Dow-Jones Industrials would not have affected the results significantly, except possibly in the timing of the 1959-60 top, and the difference there arose externally from substitutions in the index' composition.

Intermediate results obtained from analysis of the data affected significantly the choice of practical methods of forecasting. In particular, it was found that only three of the longest-leading series tended to hold their rank in the order of peaking and down turn. Any particular series of the remaining eight was almost as likely

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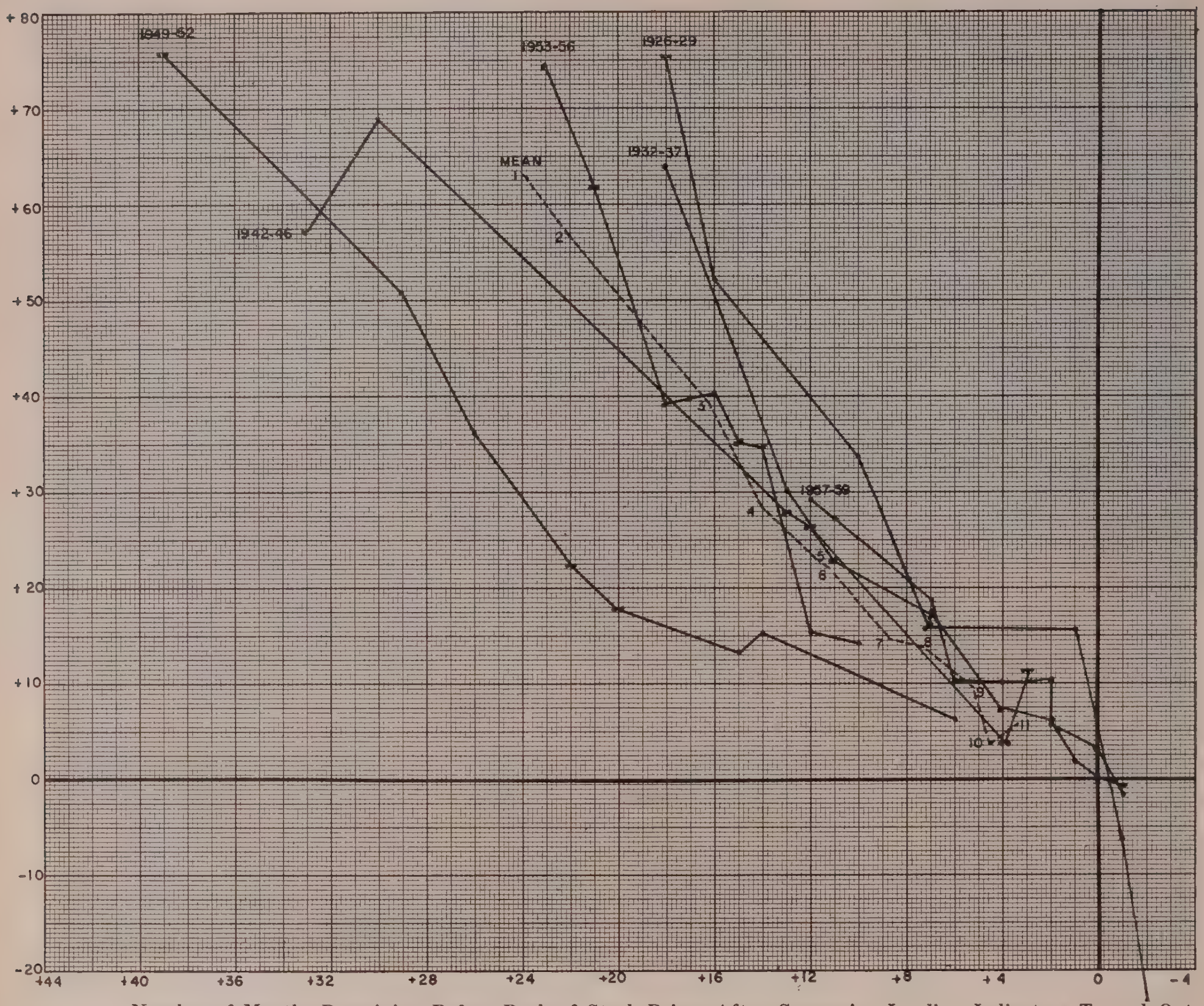
Robert W. Storer is vice president of Manufacturers National Bank of Detroit, and is engaged in bank and trust investment research. Miss Mabel V. Conn has been the Statistician of Manufacturers National Bank since 1954 and is a member of the American Statistical Association. She has a B.A. from the University of Mississippi and a M.B.A. from Wayne State University.

Percent Increase Remaining Before Peak of Stock Prices After Successive Leading Indicators Topped Out



to be the fourth as to be the eleventh, to turn down. This fact determined that the basic criterion would be, not the *identity* of the particular series which had turned down by any particular date, but rather the *number* which had done so.

We also explored the relative merits of including or of excluding the *prior* record of the particular bull market being studied—prior, that is, to the event of any selected number of leading indicators having peaked. This prior record, for example, could readily be included in the formula by analyzing what percentage of the *total* market rise (in percentage or in months of time) from its preceding major low, had been completed by the time any given number of leading indicators had topped out. We found, empirically, that inclusion thus of the market's antecedents contributed nothing to the accuracy of pro-forma results. Consequently our work in its (semi-) final form considers only the number of months the stock price index rose, and the percentage of that rise, from and after the month when each number (from 1 to 11) of leading indicators topped out, during each of the six major market rises identified above.

The results of this exploration of the combined time-rate of rise relationship, related to the parameter of the dates up to the topout of 1 to 11 leading indicators, are presented in the accompanying chart. Each line thereon is one stock-market rising cycle, with a dot marking each successive cumulative leader topout. The X axis represents the subsequent life of the bull market, in months, and the Y axis represents the further percentage rise in the market from each leader topout point. The intersection of the horizontal and the vertical base-lines represents, not a point of origin, but the point of culmination of the market rise, towards which the lines tend to converge. Some markets topped out before all eleven leaders have topped out, as is evident from inspection. The general convergence would appear to re-

Table No. 1 — Stock Price Cycles

At the Time When No. of Leading Indicators Turned Down	Number of Months Remaining Before Peak of Stock Prices (Values on X-Axis in Chart)						
	1926-1929	1932-1937	1942-1946	1949-1952	1953-1956	1957-1959	Mean
1	18	18	33	39	23	12	23.8
2	18	13	30	39	21	11	22.0
3	16	11	13	29	21	7	16.2
4	10	11	13	26	18	6	14.0
5	8	7	12	22	17	4	11.7
6	7	7	12	22	16	3	11.2
7	7	4	4	20	15	2	8.7
8	1	2	4	20	15	2	7.3
9	—1	1	3	15	14	0	5.3
10	—2	0	3	14	12	0	4.5
11	NA	—1	3	6	10	—1	3.4

Table No. 2 — Stock Price Cycles

At the Time When No. of Leading Indicators Turned Down	Percent Increase Remaining Before Peak of Stock Prices (Values on Y-Axis in Chart)						
	1926-29 %	1932-37 %	1942-46 %	1949-52 %	1953-56 %	1957-59 %	Mean %
1	75.28	63.64	57.46	75.98	74.46	29.22	62.67
2	75.28	30.38	68.68	75.98	61.71	27.44	56.58
3	52.18	22.88	27.73	50.98	61.71	18.60	39.01
4	33.81	22.88	27.73	36.43	39.19	10.40	28.41
5	20.72	17.36	26.42	22.23	39.56	10.12	22.74
6	15.83	17.36	26.42	22.23	40.04	10.12	22.00
7	15.83	7.09	3.53	17.63	34.76	10.32	14.86
8	15.78	6.12	3.53	17.63	34.76	5.68	13.92
9	— 6.08	1.63	11.13	13.41	34.73	3.28	9.68
10	—23.24	0	11.13	15.01	15.33	3.28	3.59
11	NA	—.69	11.13	6.07	14.26	—1.77	5.80

duce progressively the range of uncertainty—both as to time and prospective peak price—concerning the market, as an increased number of leading series register their highs.

The values of X plotted in this chart are set forth in Table No. 1 and the values of Y in Table No. 2.

The chart itself reflects some interesting aspects of the past cycles which are the source-material. Three out of six cycles rose almost exactly 75% from the level which prevailed at the time the first leading indicator made its high. Two others, at 64% and 57% weren't far behind. The latest cycle, that of 1957-59 ran only to 29% but, for its duration, this was in keeping with the average record.

One can readily abbreviate and combine the data of Tables 1 and 2 to present the maximum and the minimum expectancy, as well as the mean, at the point when any given number of the leading indicators are assumed to have topped and turned down. These are set forth in Table No. 3. The maximum and the minimum values are not necessarily derived at all points from the generally uppermost and lowest lines on the chart, but rather from whichever is highest or lowest at each point.

The foregoing has merely set the stage for considering the problem of the current cycle, which has been in progress since October, 1960. In terms of the approach being described here, we have — or think we have—the following data concerning each of *four* leading indicators which have—at least tentatively—topped out and turned down:

Date of indicator top out.
Level of stock price index then.

Maximum
Minimum } further duration of the market rise to be expected, on the record, at each of these points.
Mean

Maximum
Minimum } further percentage rise in the stock price index, to be expected, at each of these points.
Mean

The following Table No. 4 applies the figures of Table No. 3 to the data for the four indicator topouts which appear to have developed to date, and derives the following consecutive projections of the date and level of peak prices for the Standard & Poor's 425 Industrials.

The table below, using the dates and prevailing stock price levels when, in succession, the first four leading indicators have topped out in the course of the current stock market rise, projects successively falling peak stock prices, at successively nearer target dates. Why is this? It is because these four topouts occurred in

Table No. 3

Further Percent Rise and Further Number of Months Duration of Bull Market Based on Past Cycles— Standard and Poor's 425 Industrials

	Further Percent Rise			Further No. of Months Duration		
	Maximum	Minimum	Mean	Maximum	Minimum	Mean
From Date of Indicator Top Out						
1st	75.98	29.22	62.67	39	12	23.8
2nd	75.98	27.44	56.58	39	11	22.0
3rd	61.71	18.60	39.01	29	7	16.2
4th	39.19	10.40	28.41	26	6	14.0
5th	39.56	10.12	22.74	22	4	11.7
6th	40.04	10.12	22.00	22	3	11.2
7th	34.76	3.53	14.86	20	2	8.7
8th	34.76	3.53	13.92	20	1	7.3
9th	34.73	—6.08	9.68	15	—1	5.3
10th	15.33	—23.24	3.59	14	—2	4.5
11th	14.26	—.69	5.80	10	—1	3.4

Table No. 4

Target Peak Prices and Dates of Stock Prices Based on Past Cycles— Standard & Poor's 425 Industrials

	Target Peak Price			Target Date for Peak Price		
	Maximum	Minimum	Mean	Maximum	Minimum	Mean
From Date of Indicator Top Out						
1st	118.05	86.68	109.12	5/64	2/62	2/63
2nd	121.55	88.02	108.15	6/64	2/62	1/63
3rd	113.94	83.57	97.95	9/63	11/61	9/62
4th	98.07	77.79	90.48	6/63	10/61	6/62
5th	—	—	—	—	—	—
6th	—	—	—	—	—	—
7th	—	—	—	—	—	—
8th	—	—	—	—	—	—
9th	—	—	—	—	—	—
10th	—	—	—	—	—	—
11th	—	—	—	—	—	—

much closer sequence than has been normal in the past, especially at such an early stage. During the slower usual sequence, the market has risen more, while at the same time the average "future percent stock price rise remaining" has correspondingly fallen. This offsetting has to occur since each cycle of topouts-prices-times points throughout its life at its own single peak price level, at its own single date. Whenever the tempo of the remaining leading indicator topouts slows down to the average, the peak price level projected, and the target date for its occurrence will stabilize in the successive projections.

Realism and enlightened self-interest reinforce each other in counselling all investment Analysts that "There is no substitute for Judgment!" In this particular context, the application of judgment consists in orienting the current cyclical market rise in the family of curves of prior cycles, presented in the accompanying chart. Only to the extent that we can do so, can we narrow to some extent, the spread in the above table between the maximum and minimum results to be expected. True, as more leading indicators turn down, subsequently, this range will be narrowed somewhat, as the chart makes evident from the convergence of the lines. But investment planning could be more advantageously conceived and administered, if the range of future market events could be narrowed, with tolerable assurance.

It seems to the writers that this is the point at which the individual Analyst must apply to the chart of historical relationships his own evaluation of the total situation. He alone can decide for himself where in the family of curves the present one belongs, with the appropriate implications for further duration and appreciation.

The second obvious area requiring judgment is, of course, the question whether any given series which has made a top and turned down, will continue to retreat, thus marking the peak as a major and signalling one for the purposes of the approach being discussed here. The historical degree of volatility of any particular time series is an important clue here. The inverted series of failure liabilities is sufficiently volatile as to call for caution in identifying a top or bottom. The very early leading series of net free/borrowed bank reserves, on the other hand, is relatively stable and thus less subject to ambiguity in its indications.

As this is being written—August 8, with the Standard & Poor's Industrial Index at 71.80, only four of the particular stock-leading indicators used by us have—with greater or less certainty—topped out and turned down. The *minimum* target date for the stock price peak is close enough to be provocative. The mean of all six past cycles yields dates and projected price peaks sufficiently distant as to be reassuring. Even the minimum projected price peak is moderately above current levels.

The narrowing of the range of projected values between maxima and minima is quite evident in Table 4, as we progress from one through four topouts in the leading indicators. It is to be expected that this range will narrow further as additional series subsequently make their tops. These later tops, or suspected tops, normally may be expected to be somewhat more closely-spaced in time. This fact may influence an observer to classify firmly as a top what he might in an earlier stage of the cycle treat as only tentative.

Aside from the specifics of this particular exploration, the writers wish to make a general recommendation of increased systematic analysis of the dynamic relationships between stock price cycles and such functionally related time series as we have attempted to identify and analyze here.

R. J. Reynolds
Tobacco Company

Makers of
Camel, Winston, Salem & Cavalier
cigarettes
Prince Albert, George Washington
Carter Hall
smoking tobacco

QUARTERLY DIVIDEND

A quarterly dividend of 75c per share has been declared on the Common Stock of the Company, payable September 5, 1961 to stockholders of record at the close of business August 15, 1961.

WILLIAM R. LYBROOK,
Secretary

Winston-Salem, N. C
July 13, 1961

Sixty-one Consecutive Years of Cash Dividend Payments

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ASSISTANT FINANCE EDITOR, BUSINESS WEEK

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Hawaii bids "Aloha" and a warm welcome to a new star in the Islands... Texaco. Shown here receiving a traditional greeting are the first of the Islands' new Texaco Dealers and their able assistants. Only Texaco, at the sign of the big red star with the green T, serves motorists in all 50 states of the U. S. A. Texaco, pioneer and one of the leading producers, refiners and marketers of petroleum, takes pride in serving Hawaii, and continuing its capital investments in the economies, the people and the progress of the Free World.

TEXACO: SYMBOL OF WORLD-WIDE PROGRESS THROUGH PETROLEUM

Looking Ahead With Armco

Armco Announces New, Paintable Zinc-coated Steel

A new, *spangle-free zinc-coated* steel, especially prepared to take a smooth, lasting paint finish immediately after fabrication, has been announced by Armco Division of Armco Steel Corporation. Its name is ZINCGRIP® A, PAINTGRIP®.

In three years of outdoor tests, this new zinc-coated steel has demonstrated better paint adherence and longer paint life than other zinc-coated steels or phosphate-treated cold-rolled steels.

Tests with production equipment have demonstrated that ZINCGRIP A, PAINTGRIP is easily weldable and just as workable as Armco ZINCGRIP—the original hot-dip, zinc-coated steel. The coating doesn't flake or peel in severe forming or drawing operations.

This new product is available now in gages from 16 to 24 in cut lengths and coils up to 48 inches wide, depending upon gage. Two coating weights are available. ZINCGRIP A, PAINTGRIP steel is expected to have wide application in the automotive, appliance, sign, architectural, heating and air conditioning and farm markets.

Steel

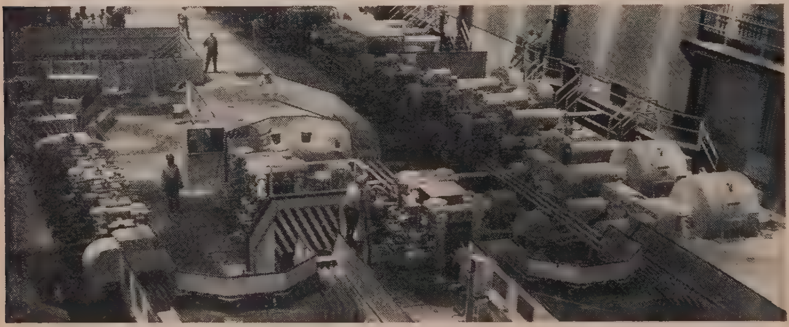
This Steelmark says a product is made of modern, dependable steel. Use it on products you make; look for it on products you buy.

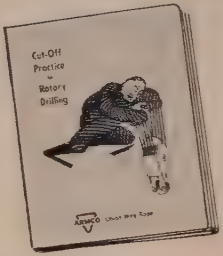
Mile a Minute Speed; That's Sheffield's New Rod Mill

Continuous lengths of steel rod are rolled and coiled at speeds of 60 to 74 miles an hour at Armco's Sheffield Division in Kansas City, Missouri.

At this ultramodern rod mill, steel billets are reheated to rolling temperature. From the furnace, the billets start through a 23-stand, three-strand mill. Traveling at speeds up to 6500 feet per minute, rods are delivered into reels that handle 1000 to 1800-pound coils.

Armco's Sheffield Division has the largest capacity for steel rods in the West. Production of this mill is used for concrete reinforcement and for the manufacture of wire, wire rope and bolt products. Armco Steel Corporation, General Offices, Middletown, Ohio.





600,000 Calculations Aid Wire Rope Life

Knowing when and how to shift the wear on wire rope used in rotary drilling rigs is highly important to oil men. By cutting off just the right length of rope at the drum, wear can be equalized and important savings realized.

The right cut depends on many factors and calls for complicated calculations. Armco's specialists in Union Wire Rope brought out the first workable cutoff procedure nine years ago.

Now, with the help of electronic computers, an improved cutoff procedure has been developed for Union Wire Rope. More than 600,000 calculations were made by the computers to produce 462 charts that cover all variables.

Union field men now gather information on a specific drilling operation and from it supply appropriate charts that outline the most economical wire rope cutoff procedure.

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An Investment Approach To Microwave Securities

by Neal Deoul

MUCH HAS BEEN WRITTEN in the past two years analyzing the microwave industry and its potential as an investment vehicle. Currently representing almost 20% of the total electronics industry, microwaves are expanding at a rate 50% greater than the electronics field in general. Having exceeded the billion dollar level, and supporting associated industries estimated at two billion dollars, it is anticipated that the microwave industry will double its present volume by 1965.

This article will present an investment approach designed to attain attractive capital gains with minimum risk. Specifically, the well-publicized, thoroughly-analyzed and now over-discounted contemporary industry leaders will be spurned in favor of tomorrow's front runners. Further, investment across the microwave board (i.e., all phases of the industry) provides a technique for enhancing possibility of gain while minimizing danger of loss.

The Microwave Field

Consider first the microwave field. Using frequency as a common denominator for the electronics industry, microwaves are generally regarded as that part of the electromagnetic spectrum between 300 and 300,000 megacycles per second. Continued industry growth is insured by virtue of the unique properties of this extremely high frequency energy, and the ever-increasing variety of characteristics obtainable with microwave devices — factors which combine to establish microwave techniques as the major means of intelligible communication in our society. Thus, microwave energy, unlike lower frequency radio waves, propagates in straight lines, permitting its formation and radiation in predetermined patterns through the use of relatively small, high-gain antennas. In contrast with lower frequency systems, microwave devices and techniques permit the transmission of increased information and/or provide greater resolution.

> Military and commercial applications of microwaves continue to expand at a remarkable rate. Cross-country television, telephone and teletype, radar, radio astronomy, navigation, air traffic control, satellite-to-satellite and planet-to-planet contact, as well as numerous other forms of communication are dependent upon microwave techniques. Similar techniques are being applied to increasing the data-handling capability of computers.

Microwave transmission of data is achieved by superimposing the information to be communicated onto a carrier signal at microwave frequencies. The carrier signal is generated by a transmitting tube, modulated, (information superimposed) and conducted to the antenna by means of waveguides or, in some cases, at frequencies below 10,000 megacycles, coaxial cable. Radiation from the transmitting antenna to a receiving antenna is generally line-of-sight. Considerable effort is being devoted to improvement of long-range scatter propagation techniques, utilizing signals deflected from ionized layers in the atmosphere. Upon receipt of the transmitted signal, detection occurs and the desired information is extracted.

Industrial and scientific uses, ranging from microwave cooking to studies of outer space, offer new horizons for the applications of microwave energy. Microwave spectroscopy is used to determine the properties of atomic and molecular structures. Electron paramagnetic resonance spectrometers perform nondestructive analyses of biological systems, chemicals and semiconductors. Suffice it to state that the growing demand for increasingly versatile communications systems, such as the much-publicized Western Union network and the A T & T communication satellites, coupled with an expanding variety of industrial applications, promise a burgeoning industry during the current decade.

The microwave field can be conveniently subdivided into several distinct segments, including systems, tubes, test equipment, components, solid-state devices and antennas. Each area contains several "leading" companies, many of whom continue to represent attractive long-range investment situations, but nonetheless situations already excessively discounted (i.e., price-earnings ratios approaching 100) in the investment community. This article will consider a "custom-built microwave investment vehicle" representing a composite of companies engaged in various aspects of the microwave industry. Companies will be selected not on the basis of extended records of past earnings and proven competitive ability, but rather on the less obvious and somewhat less tangible symptoms of future growth — experienced, creative management and technical talent; proprietary products imaginatively designed and

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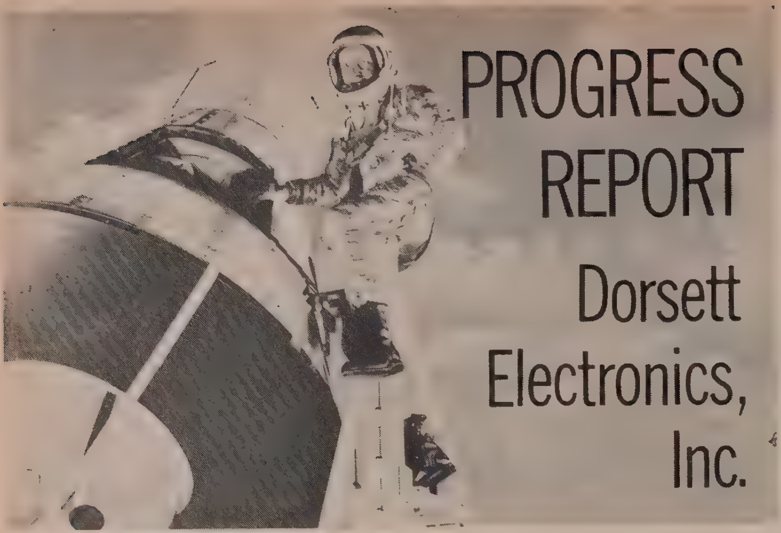
Neal Deoul is a founder and president of Paradynamics, Incorporated, Westbury, L. I., New York, and former sales manager of FXR, Inc. Mr. Deoul received his B.S. in physics from the City College of New York and holds a LL.B. from Brooklyn Law School.

efficiently produced to meet the changing requirements of a growing industry; aggressive marketing; inherent overall industry growth as well as relative growth of their particular segment; sufficient size to insure the stability required to withstand the anticipated shakeout in the electronics industry. Our custom microwave vehicle will be chosen from a group of relatively small "specialist" companies in contrast to extensive organizations whose outstanding success in one segment of the microwave field might be offset by modest success or even failure in another phase of microwaves or electronics in general.

MICROWAVE SYSTEMS

This major dollar segment of the industry utilizes a variety of equipment, (tubes, components, antennas, etc.) combined in complex, costly, integrated networks. Prime contract responsibility encompasses the design, manufacture, installation and maintenance of these systems. Due to the enormity of current microwave systems, only the larger electronics companies can afford to participate as prime contractors with overall project management responsibility. Note that among systems companies microwaves is not the only area of corporate endeavor; in many instances it represents only a fraction of total sales.

Recent government prime contract policy has fostered numerous cost-plus-fixed-fee awards, with attendant 6-7% pretax profits. In many instances, unanticipated nonrecoverable costs result in considerably reduced profit margins. With growing competition, compounded by government regulations requiring increased subcontracting to small business, larger organizations will be hard-pressed to maintain their proportionate share of the expanding microwave market. Further, looking forward from their present peak sales levels, to maintain or extend corporate growth rates established during the past few years is a difficult and perhaps unrewarding task. Diversification and/or acquisition is almost mandatory, with "adventures" into slower-growing, less


PROGRESS REPORT Dorsett Electronics, Inc.

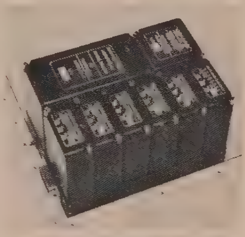
Planned Expansion Advances Dorsett in Three Major Fields

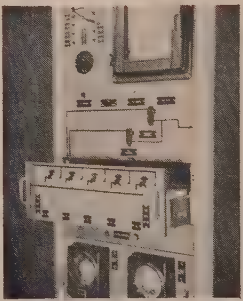
VITAL AEROSPACE TELEMETRY EQUIPMENT bearing the Dorsett name flowed in rapidly-increasing numbers to more and more of the nation's most advanced projects. Systems and components went to Project Mercury, Redstone, Discoverer, Atlas, Polaris, Sergeant, Tartar, Firebee, White Lance and Advanced Terrier. Reliability of Dorsett airborne telemetry equipment has been firmly proved by use in these programs.

DORSETT'S RAPID EXPANSION, carefully planned, gives the company strategic outlets within, or near, important aircraft and/or missile complexes, in addition to increased production-sales-distribution capacity.

NEW BRANCH LOCATIONS, many already being adapted and expanded, include: American Missile Division, Electronic Controls Division, Speedster Products Division, Electronic Organ Division, Visual Systems Division and the Visual Services Division.

DIVERSIFIED INTERESTS provide the keynote for Dorsett's fast growth, with high priority on entry into electronic controls and automation devices for industry and business outside military fields. 1960's acquisitions advance this plan significantly with an impressive variety of facilities, seasoned personnel and engineering talent. Your inquiries, directed to Loyd G. Dorsett, President, will receive prompt attention.


AEROSPACE ELECTRONICS


INDUSTRIAL ELECTRONICS

CONSUMER ELECTRONICS

DORSETT ELECTRONICS, INC.

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profitable areas distinct possibilities. The basic problems inherent in attempting rapid growth from a large equity base combine to make the systems companies the least attractive capital gains segment of the microwave industry. This fact, despite the knowledge that most major electronic companies, as evidenced by dated, proven earnings records, represent excellent long-term selections for the cautious investor.

Within the past two years, a "second echelon" of microwave systems companies has emerged in the industry. These are the 15-50 million dollar corporate structures, discernible by their relentless and often spectacular sales programs, and, in many instances, state-of-the-art technical contributions designed to creatively overshadow and hopefully replace many of the "old-line" companies now in choice positions with the military. From among this group, several outstanding practitioners deserve consideration for inclusion in our custom microwave company. These should be at least five years old, currently employing 1,000 or more people, with a 1960 sales peak in excess of 10 million dollars, and at least double this in backlog.

These companies are further characterized by recent rapid growth, attributable in large part to their technical contributions in some major systems area, such as electronic countermeasures, and to a lesser, and perhaps ultimately more important extent, to the establishment of a proprietary product base. With heavy R & D burdens now relieved, and system and proprietary production in full swing, coupled with continued emphasis on proprietary product development, it is anticipated that past unimpressive earnings will improve over the next few years, to accompany a steady, if not even more spectacular increase in sales.

One word of caution. Prevalent among this "second echelon" are numerous newcomers to the microwave field. Aggressively intent upon securing a recognized position in the industry in a minimum of time, low-priced, fiercely-competitive bidding

Report from North American Aviation, Inc.

The space age has set new ground rules for corporate growth and North American Aviation has met the challenge through diversification

In the last decade — the embryonic period of the Space Age — a new kind of company has emerged in American industry. It is an organization that has developed highly advanced skills in a wide range of new technologies. Among the foremost of these space-age companies is North American Aviation.

The changing sales picture that has occurred within North American Aviation reflects the diversification into new fields that has taken place. This is a significant change in a company that once was best known only for its superior military aircraft.

The complete picture of North American's growth and diversification can be seen clearly in this chart:

Fiscal Year	Total Sales (in millions)	Aircraft Sales (in millions)	(% of Total)	Non-Aircraft (in millions)	(% of Total)
1953	$ 635	$ 542	85%	$ 93	15%
1954	646	542	84%	104	16%
1955	817	654	80%	163	20%
1956	914	625	68%	289	32%
1957	1,244	834	67%	410	33%
1958	904	571	63%	333	37%
1959	1,045	566	54%	479	46%
1960	964	358	37%	606	63%

Today, North American is maintaining its leadership in advanced aircraft with the Mach 3 B-70 Valkyrie program and in aero-space craft with the X-15 rocket plane. And at the same time, it is advancing the new technology in many fields: nuclear reactors, liquid and solid rocket engines, manned and unmanned flight in aero-space, metallurgy, computers and data processing, and electronics.

This sound diversification and growth picture is the result of extensive research and development in the many fields of the future where North American Aviation continues to push forward the frontiers of technology.

NORTH AMERICAN AVIATION

DIVISIONS: ATOMICS INTERNATIONAL, AUTONETICS, COLUMBUS, LOS ANGELES, ROCKETDYNE, SPACE & INFORMATION SYSTEMS

At work in the fields of the future

of military production contracts represents a most desirable course of operation. While perhaps a sound business approach for the companies involved, short-term investor benefits are doubtful. Production contracts result in little or no build-up of engineering capability, little or no proprietary end products, and *worst of all, little or no profits*. During this "learning" phase in the corporate life cycle, caution must be the rule for the astute microwave investor.

Microwave Tubes

The heart of a microwave system, the source of the energy, is the tube. It is the tube that must provide the power, bandwidth, stability, etc. demanded by modern sophisticated microwave systems. Magnetrons, klystrons, traveling wave tubes and backward wave oscillators still dominate the one-fourth billion dollar market, with mounting interest being generated in the newer tubes. Emphasis continues to be placed on higher power and increased bandwidth, and the sustained effort to develop low noise oscillators and amplifiers has added the terms maser and parametric amplifier to the vocabulary of the layman.

Tube design and manufacture is still a rather unique and often esoteric art in the microwave industry, generally leading to quality rather than price considerations in purchasing. Resultant profits are now, and will undoubtedly remain for many years, at a relatively high level. Further, tube companies enjoy the significant benefits associated with proprietary products marketed to a diverse microwave population. Unfortunately, however, it is not always possible for the investor to take maximum advantage of this situation. This stems from the fact that many leading tube designers are also prominent systems manufacturers, thus diluting their high-profit tube efforts with modest-profit system endeavors.

For purposes of our custom investment vehicle, a relatively "pure" tube company is a must. In preference to the well-entrenched leaders of today, selection of a newcomer is advocated for maximum capital gains. As current front-runners seek to maintain their remarkable past sales pace through diversification and acquisition, excellent opportunities exist for exciting lower-level growth among the fledglings. Selection should be limited to a company with an attractive, continuing R & D program, financed out of present earnings, not future prospects.

Microwave Test Equipment

Progress in the microwave field is inexorably dependent upon the ability to measure the many parameters encompassed in equipment design and development. Measurements must be both accurate and reliable, at various power levels over broad frequency ranges. A growing demand exists for test equipment capable of meeting these stringent requirements.

As with the tube manufacturers, test equipment companies benefit from a diverse market, with total sales volume comprised of a multitude of smaller orders rather than a few substantial contracts. The proprietary position inherent in these measuring devices enhances the prospects for excellent profit margins. Currently accounting for over 50 million dollars annually, the test equipment field is expected to more than double by 1965.

Several companies have long enjoyed established positions in this segment of the industry. Outstanding management, creative and intensive R & D, aggressive and alert marketing attuned to the pulse of the industry, and judicious acquisitions have firmly established one as "the company to watch." Current p.e.'s, however, indicate that investors have more than heeded the advice to watch. Although the leaders will undoubtedly maintain an impressive growth rate over the next few years, less heralded companies offer even more attractive investment rewards.

No potential successor, or even serious competitor, to the across-the-test equipment-board leaders, is visible on the current microwave horizon. Accordingly, attention is focused on restricted portions of the test equipment field. Again, the search is for a "specialist"—a specialist within a specialized segment of the microwave industry—a company dedicated to emergence as a leader in its own limited, but nonetheless rewarding, phase of endeavor. These organizations are capable of maximum flexibility — quick reaction time—an indispensible attribute of a "coming" company responsive to the needs of its customers. Though restricted in breadth, technical effort must be of the highest quality and intensity. Such effort, appropriately directed, is evidenced by continued marketing of state-of-the-art equipment, competitively priced and profitably produced. Care should be taken to avoid the many stand-pat companies still reaping the rewards of opportune early entry into a new and blossoming field.

The maximum gains derived from proprietary products distributed to a broad market make test equipment companies a must for inclusion in our investment vehicle.

Microwave Components

Often considered part of the test equipment field, although utilized more extensively in systems applications, components represent a rapidly expanding but not always profitable segment of the microwave market. Products run the gamut from high profit, sophisticated proprietary items to literally non-profit, non-engineered, "machine-shop plumbing." In consequence of this enormous variety of components, the investor must be extremely selective in his choice of companies. Generally, capital gains potential is greater in those companies sponsoring an engineering effort devoted to the development of proprietary products. A better understanding of this often over-touted segment of the microwave industry is in order.

Almost all microwave component fabrication involves relatively precise metalworking supported by appropriate quality control. Most parts require tight tolerance machining; precision assembly is often demanded. All components require final electrical testing as well as mechanical inspection; some require very accurate calibration.

The proportion of skilled workers is relatively high in the microwave field, as compared with most areas of electronics, due to the "custom" crafted nature of the products. Indirect labor costs are also high, resulting from the engineering programs and supporting facilities.

Consider then the component companies. Many firms manufacture almost exclusively on special order to customer specifications. Such companies perform little or no engineering services, operate at minimum expense, and endeavor to participate in the overall growth of the industry. These are the companies without a future. These are the companies engaged in the most fiercely competitive job-shop phase of the entire industry, subject to the fluctuating workloads of their customers. These are the non-profit organizations devoid of investment appeal.

In contrast, other firms produce and market a broad line of "catalog," proprietary components in much the same manner as the test equipment people. A distinction might be made in that, unlike the standard, general-purpose designs for test equipment, components are often custom conceived in response to specific requirements. Even so-called standard components are frequently tailored to meet individual specifications. New techniques are prominent, such as strip transmission line assemblies which perform functions with a significant reduction in size and weight as compared with conventional waveguide designs. These companies pay the price of increased operating expenses due to their engineering programs, but secure the rewards of less competitive end products with higher profit margins. These are the companies with a future, with the investor advised to refrain from participation until alleged competitive superiority is justified by continued earnings.

A word of warning regarding the component field, and to a lesser extent, the microwave industry in general. A prevalent infirmity, characteristic of far too many companies,

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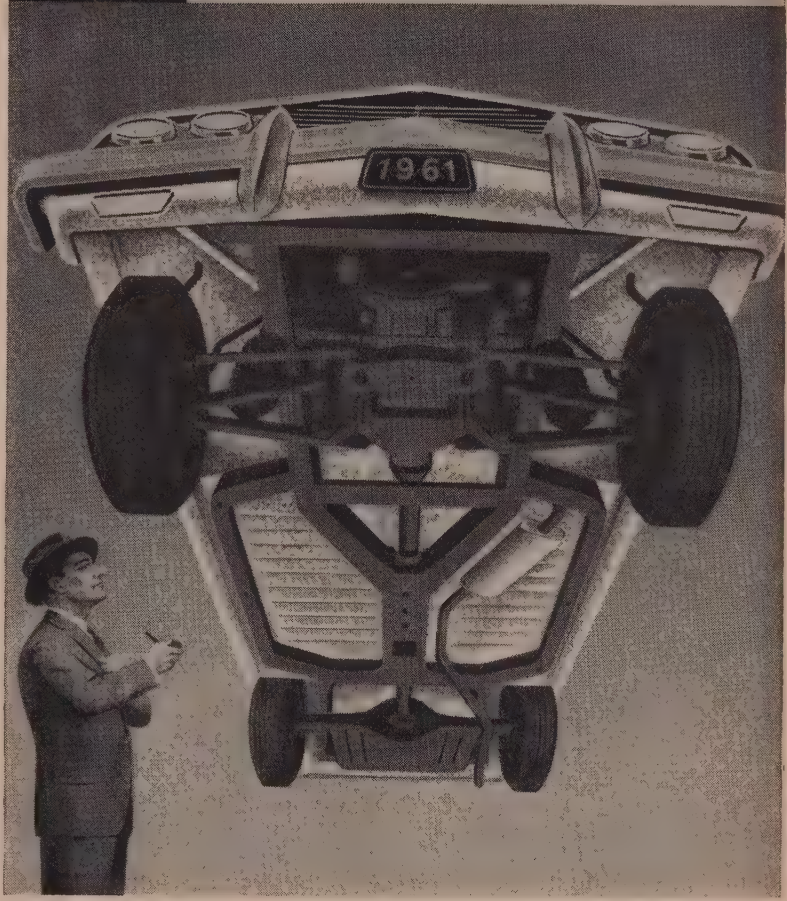

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is consistently poor earnings. Justifications are numerous, with "heavy plow-back into R & D"—the most common and perhaps the most persuasive. Although difficult for the investor to evaluate, it is imperative that some tangible evidence of the effects of the plow-back, such as new products, be forthcoming. Earnings cannot endlessly remain subservient to future promises.

SOLID STATE DEVICES

Much publicity has recently been accorded the solid-state field, a relatively small, but most dynamic and glamorous segment of the microwave industry. Realistic appraisal upholds the solid-field's claim to sophistication, but concurrently reveals it to be intensely competitive, pitting many of the brightest minds in the microwave industry in a costly, unending R & D battle for supremacy. Plagued by the demands of a hungry technology, profit margins are thin, with sustained earnings still a thing of the future. Accordingly, despite its unmatched glamor, solid-state investments are considered premature at this time.

To better understand the role of solid-state devices in contemporary microwaves, the following information is provided. Microwave energy must be controlled in numerous ways in addition to its generation, amplification and detection. Improvements are constantly being made in the transmission lines that confine this energy and in the components that influence it in particular applications. Ferrites and the well-known semiconductors are among the most significant solid-state materials presently incorporated into the basic design of microwave components. Such components often offer advantages in cost, weight, size, speed of operation, reliability and electrical specifications.

Ferrites are crystalline materials formed of iron oxide and at least one other oxide. By varying ingredients and manufacturing processes, a wide range of characteristics can be obtained. Thus, without the use of moving parts, it is possible to control attenuation, phase shift, polarization and other microwave effects.

Ferrite devices constituted almost a 10 million dollar market in 1960; a 50 million dollar market is projected for 1965. Such devices include isolators, which permit energy to be propagated in one, but not the reverse, direction, and circulators, multiport devices designed to reliably permit energy to enter one port, pass through another port, but not through the remaining ports.

Newer devices utilizing semiconductors include the parametric amplifier and maser, extremely sensitive low noise microwave receivers, and tunnel diodes, microwave generators with ultra stable frequency characteristics.

Microwave Antennas

Comparable in size to the combined test equipment and components market, antennas represent another fiercely competitive, generally low profit, segment of the microwave industry. Often dependent upon large contracts, antenna companies are capable of substantial, though sporadic growth, accompanied by highly variable earnings.

Keeping pace with the increased versatility and improved performance of microwave systems, antenna designs have undergone pronounced evolution in recent years. The advent of new developments, including the now-prominent phased array antennas, have resulted in increased internal R & D expenditures by many firms, promising continued unsettled profit pictures during the next few years. Accordingly, our custom investment vehicle would do well to bypass antenna firms for the immediate future. Selected exceptions are permissible in cases where contemporary corporate policy advocates diversification into the more profitable test equipment and proprietary components fields. Investment should be restrained, however, until the seriousness and depth of the diversification is evidenced by sustained earnings.

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J. THEODORE WOLFE,
Chairman of the Board.

Dividends paid on the Common Stock continuously for more than half a century—always earned—never reduced.

Microwave Materials

As in all areas of electronic endeavor, the microwave field is in constant search of a significant technological "breakthrough"—a major contribution to the endless effort to better generate, detect and measure microwave energy. The area of new basic materials offers hope for such a breakthrough. Increasing R & D expenditures of money and talent are being applied to this infant industry in the prospect of these materials augmenting or even radically modifying present microwave devices and techniques. Although too new to offer substantive clues as to its future, this field commands serious surveillance as an outstanding potential media for investment.

SUMMARY

This article has constructed the base for a custom fabricated microwave investment vehicle; its growth is limited only by the resources and imagination of the investor. Infectious optimism and glowing predictions for the future of the microwave industry have been tempered with diverse participation in specialist companies within selected areas. Guideposts have been established for choosing and monitoring future corporate participants. Investor participation is recommended despite inflated aftermarkets, for a properly evaluated stock in an inflated aftermarket will nonetheless prove to be a bargain in years to come.

Truly the microwave horizon offers both stimulating and rewarding participation to the technologically-oriented investor.

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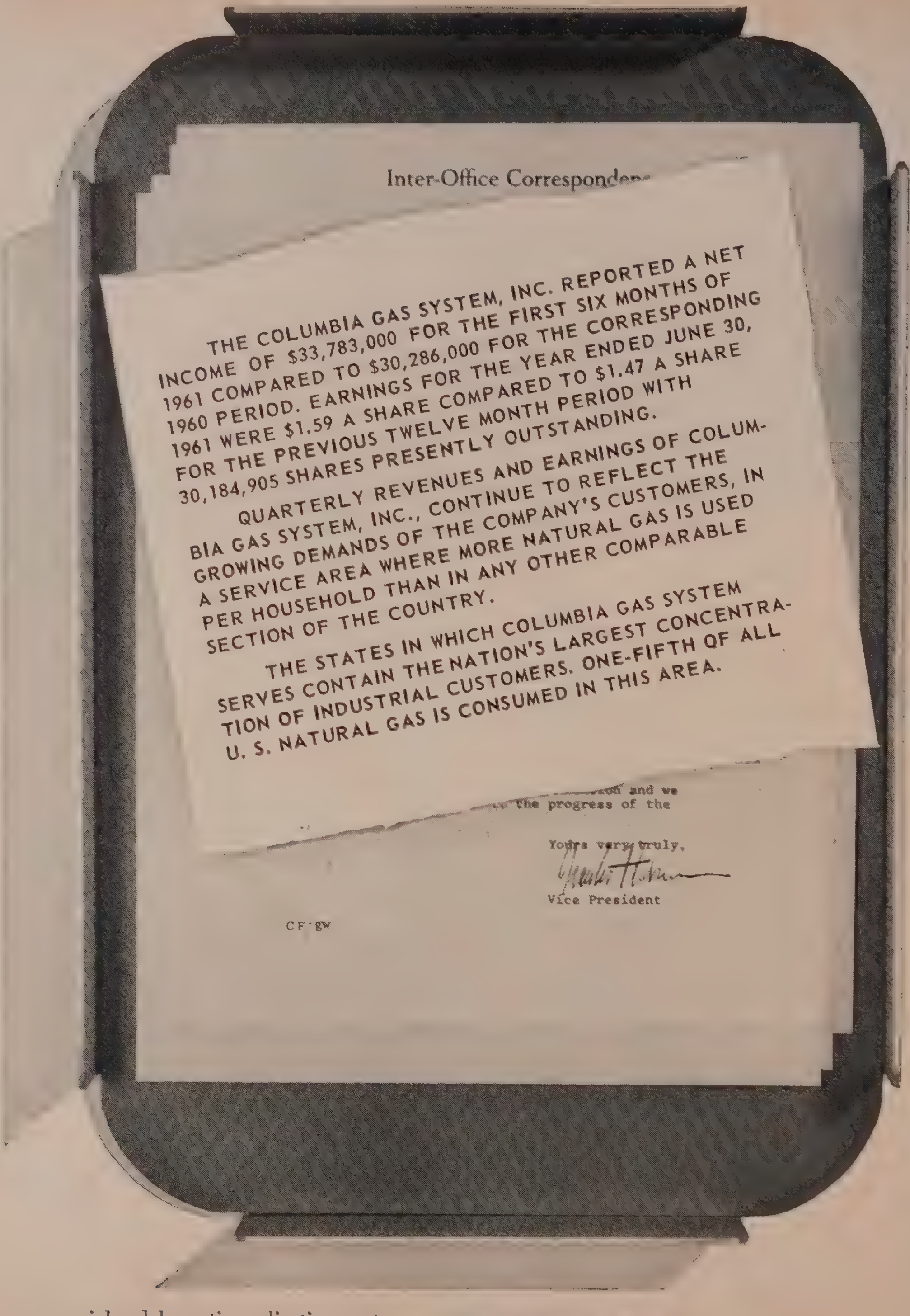

Inter-Office Correspondenc

THE COLUMBIA GAS SYSTEM, INC. REPORTED A NET INCOME OF $33,783,000 FOR THE FIRST SIX MONTHS OF 1961 COMPARED TO $30,286,000 FOR THE CORRESPONDING 1960 PERIOD. EARNINGS FOR THE YEAR ENDED JUNE 30, 1961 WERE $1.59 A SHARE COMPARED TO $1.47 A SHARE FOR THE PREVIOUS TWELVE MONTH PERIOD WITH 30,184,905 SHARES PRESENTLY OUTSTANDING.

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Yours very truly,

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Changing Population and Changing Demand

by Pierre A. Rinfret

In the closing weeks of 1959 and the early weeks of 1960, book dealers must have had a bonanza in selling thesaurusi. The financial press exhibited no lack of diligence or imagination in finding a nametag for the Decade of the Sixties. The 10 years from 1960 to 1970 were coined as the Dynamic Decade, the Golden Decade, the Golden Sixties, the Soaring Sixties, the Era of Growth, the Dynamic Sixties, the Era of Opportunity, and many other glowing epithets. Unfortunately, in economics a name doesn't substitute for analysis; and when the 1960-1961 recession became a fact, the thesaurusi were fast traded in for slide-rulers, statistics, and basic judgment.

An appraisal of the economic outlook for this decade reveals that no single, catch-all title can be applied to the 1960's. Why? Because this is going to be a *decade of turbulence* in the American economy, with *change* being about the only term to describe what is in the offing.

The title, a Decade of Change, is not meant to be a title per se, but rather an idea, a concept of the underlying character of the American economy in the current decade. A title per se would be all encompassing, all embracing; a concept, on the other hand, indicates a method of approach, a guidepost in assessing economic conditions.

Change, But . . .

Change is not a new idea or a new concept. There are many economic theorists who hold to the view that the American economy is dynamic because the continuous process of change creates new opportunities and new horizons. Change and adaptability have long been characteristics of the United States. Nevertheless, the changes now developing are something new in the American economy. Certainly the 15 years since World War II ended have seen all kinds of changes develop in the American economy, but. . . .

Yes, there is a "but." That "but" is that these changes have been characterized by similarity and likeness. They have been more or less orderly changes. Industries grew and changed, yet they were the same industries. Consumers' tastes changed, yet the changes were orderly and recognizable. In short, although changes occurred, they were not substantial or altering changes.

This is not to say that no profound changes came about in the post-war period. The maze of TV antennas on suburban rooftops is proof enough. The point here is that in the Sixties the changes appear to be coming faster and in greater numbers and appear to be having a deeper effect on the economy. The structure and fabric of the American economy is being transformed at a faster pace than in the Forties and Fifties.

Although the Sixties should see the face of the American economic map altered right across the board, of particular importance for the next few years is that the *pattern of consumption will be changing*. The newly emerging pattern in consumption is directly related to the age distribution of the population; and the net result will be a changing, new demand picture for appliances, houses, and automobiles.

In a nutshell, the changing consumption pattern is a marked and far reaching change that is just beginning to emerge. Several years ago, the increase in the 18 to 24-year-old population was assumed by many unsophisticated Financial Analysts to mean automatically increased demand. Now the facts are beginning to be realized.

The 18-24-*Year-Olds*

The 18 to 24-year-olds have an average income that is about $2,100 below the national average ($3,200 vs. $5,300). That means the demand of this age group is vastly different from the national average. And since about 88% of all first brides are between the ages of 15 and 24, it means that, in essence, marketing and selling will be downgrading rather than upgrading. For the past 15 years, upgrading has been the key to selling. Now the trend may be reversed. The changing population mix is generating a changed demand mix.

Trends in Age Distribution

Because the backdrop to the changing demand six is a shift in the age distribution of the United States population, it is proper at this point to indicate the trends in the age distribution and to then proceed to an analysis of the ramification of these trends.

The first step is to ascertain what age group in the population is growing fastest. Remember, this is not a projection or forecast. The method is merely to age the people alive today. And by studying the number of 18-24-year-olds, you will find that there was a contrac-

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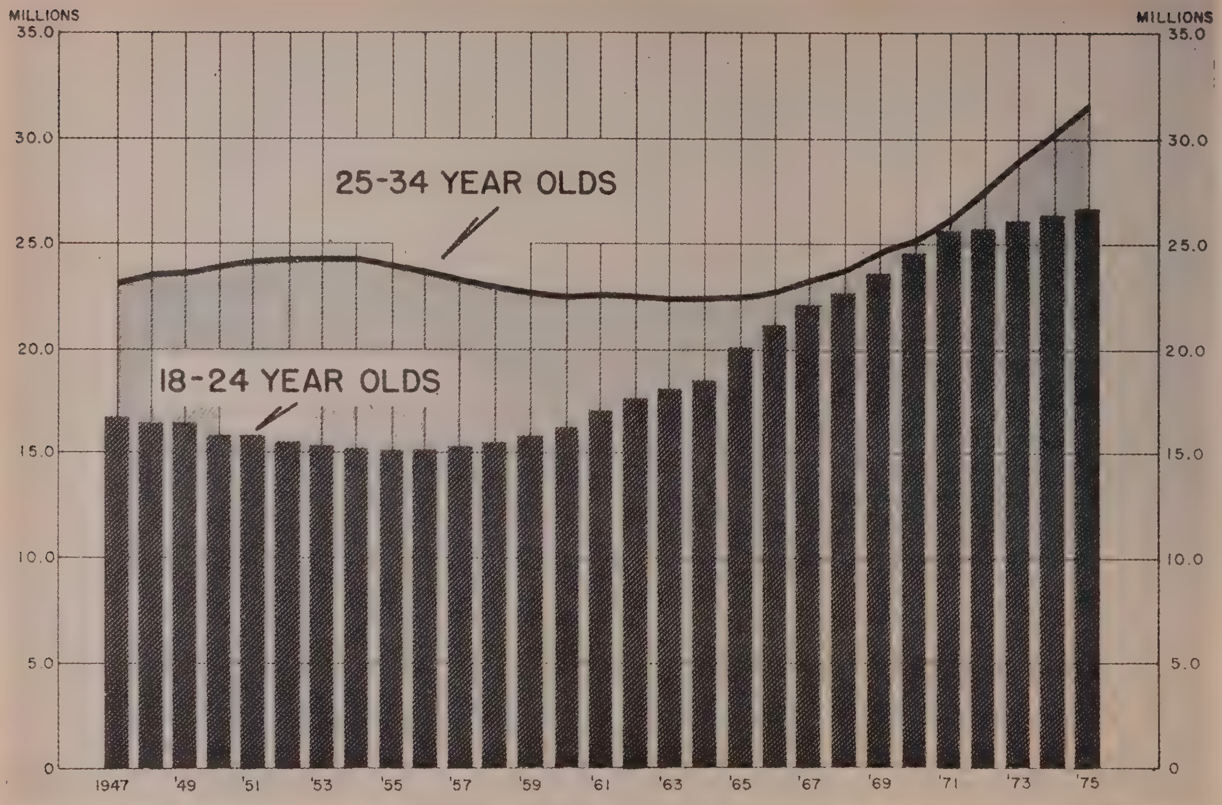
Dr. Pierre A. Rinfret, vice president and director of the economic division of Lionel D. Edie & Company, attended the University of Dijon, in France, on a Fulbright Scholarship, where he received his doctorate. Dr. Rinfret also has a degree in electrical engineering from the University of Maine.

GROWTH IN SELECTED AGE GROUPS



tion in this group from 1949 through 1955. Thereafter, you find steady, sharp growth until 1970, when the uptrend slows down appreciably.

The curve of the 25-34-year-olds shows a different trend. This group grew in numbers from 1947 through 1954, at which time growth peaked out and contraction took place. This contraction will continue through 1965. After that the trend of the 25-34-year-olds will move upward moderately until 1970. From 1970 through 1975, the 25-34-year-olds' curve will accelerate sharply upward.

Look at these trends in another way: in 1960, the 18-24-year-olds accounted for nine percent of the total population; by 1970, this sector will account for roughly 11.6% of the total United States population. Compare this to the position of the 25-34-year-olds. In 1960, they accounted for 12.6% of the population; this share is expected to decline to 11.8% in 1970, roughly the same percentage of total population as the 18-24-year-olds. This is the demographic setting of the next few years — an increase in the relative importance of the 18-24-year-olds, a decrease in the relative importance of the 25-34-year-olds. And the demographic setting influences demand patterns through three key variables —marriages, income and financial position. (See chart)

A large proportion of marriages occur within the years from 15 to 24. The median age for all women at their first marriage in 1960 was 20.3 years, for all men, 22.8 years. In 65% of all first marriages during 1957, the groom was between 18 and 24; the bride was in this age group in 70% of all first marriages.

Marriage and Money

In short, then, this is the marrying group and the group setting up new households. How much do they have to spend to equip their homes?

In 1959, the average income before taxes for all 18-24-year-old spending units was $3,200 compared with $5,300 for the 25-34-year-old spending units. In that same year, 85% of all 18-24-year-old spending units had less than $500 in liquid assets (checking accounts, savings accounts and government bonds); and this figure includes 37% who had no liquid assets whatever. In the 25-34-year-old group, by contrast, 33% had liquid assets in excess of $500 (up to and including $10,000). This indicates that the 18-24-year-olds have a lower average income and also maintain smaller amounts of liquid assets than the 25-34-year-olds.

This population trend and income analysis can now be woven together to fabricate a picture of the consumer demand pattern over the next several years.

Housing is a prime example of how current population trends will churn up the demand mix. In general, 18-24-year-olds rent their dwelling places rather than purchase them. In 1959, only nine percent of the spending units in this group owned their homes, while 43% rented and 40% lived with relatives. Seven percent were classified as "other," which indicates they were living in a house as part of compensation or living temporarily in a home that has been sold, etc. On the other hand, 39% of the 25-34-year-old spending units own their homes, 50% rent, eight percent live with relatives, and four percent live in dwellings classified as "other."

When non-farm family units, instead of spending units, are considered, larger proportions of both groups own their homes. The following table illustrates the housing status of non-farm family units in 1959:

Age Group	Owns	Rents	Other
18-24	16%	57%	26%
25-34	42%	52%	6%

The younger group tends to be more mobile than the 25-34-year-olds. In 1959, 37.7% of all 18-24-year-olds moved, while only 28% of persons between the ages of 25 and 34 changed addresses. Both groups show a higher rate of mobility than the total population, of which 19.2% moved during 1959. We can put this another way: the total number of families in the 18-24-year-old group moves about once every three years. The total number of families in the 25-34-year-old group moves about once every four years, while the average moving date for the entire family population is once every five years.

How do these facts and figures and statistics influence the demand for houses? In this way: the bulk of new marriages is in the 18-24-year old age group; these people have a low average income, they are the bulk of new families formed; and this is the age group that is rising. They rent apartments and small units. They are not big buyers of single family units. The consequence: the housing mix is going to change with a new emphasis on apartments and low-priced housing.

Because the high income 25-34-year-old population was in a rising trend in the late Forties and early Fifties, single unit houses at constantly rising prices were in great demand. Now basic demand is being generated by a different age group, the low income 18-24-year-old age group; and the switch to apartment house building is the result of this changing population mix and the marketing profile it presents.

HOMES AND APPLIANCES

To continue: multiple-dwelling housing incorporates an entirely different set of home appliances than private homes so the demand for appliances is also likely to be altered as we move through the early years of the 1960's. Appliance purchase — roughly speaking — depends directly on income, on liquidity, and on home ownership. On all three counts, the 18-24-year-olds cannot be expected to be purchasers of many appliances or of expensive appliances. Being of prime marriageable age and possessing little extra cash, this age group must allocate its resources over a large area of necessities, none of which can be too high in price.

For the appliance industry, the anticipated surge in multiple-dwelling houses means smaller, free standing refrigerators and ranges; and an increase in bulk purchases, perhaps on a wholesale basis, i.e., landlords buying large quantities at discounts from distributors.

This picture changes as we go out to the 1965-1970 period. Here we begin to feel the effect of a rise in the 25-34-year-old group. The home-owning 25-34-year-old buys larger refrigerators, built-in ranges, dishwashers and washing machines, and pays a higher price per unit for these one-at-a-time purchases that take place at the retail level.

The influence of the 18-24-year-old groups does not stop with housing and appliances. The analysis can be extended, with the auto industry a very good example.

New Cars, Used Cars

Let us look at the marketing profile of new car buyers, and let's consider, for the moment, the new car buyer and ignore the used car buyer.

The marketing profile of the new car buyer:

Six percent of all new cars are purchased by the 18-24-year-olds.

Twenty-five percent (one in four) of all new cars are bought by the 25-34-year-olds.

Thirty-three percent of all the new cars (one in three) are bought by the 35-44-year-olds.

We can put it this way: six percent of all the new cars are bought by the age group that is rising, and 58% of all the new cars are bought by the age group that is declining.

What possible positive impact can the 18-24-year-olds have on the new car market? That age group is rising rapidly in numbers, but they just don't purchase enough new cars for the population rise to be significant to the auto industry. In fact, the opposite side of the coin is more significant. Keep in mind that we have more automobiles than we have families; that somewhere between 2.5 to 3 times more used cars are sold per year than new cars; and that finally the big buyers of cars are the 24-44-year olds. Thus, one can see that the *decline* in the 25-44-year old population is the significant element in auto demand.

Put it simply: the big buyers of autos are declining in numbers, or, alternatively, the big increase in the population is in the age group that buys an insignificant number of cars. What does the changing population mix mean to the auto industry? Simply this: a change in the demand for autos, negative now, dynamic after the middle of the decade. The changing population mix is changing the demand mix for autos (and that includes the import situation, a volume in itself).

THE FOOD INDUSTRY

Now it is true that autos, appliances and housing are pretty obvious examples of the way that the changing population mix will affect the demand mix. Let's look at an industry that is even more basic and far more stable: food. Perhaps, it is surprising to think that the change in the population mix can affect the demand mix for food, but it is true and true in a basic way.

We start with a basic fact: different age groups consume different quantities of food. The average daily caloric intake differs, substantially from one age group to another.

Average Individual Daily Caloric Intake

Age Group	Male	Female
7-9	2,250	2,050
10-14	2,850	2,310
15-17	3,180	2,230
18-24	2,980	2,030
25-34	2,830	1,950
35-44	2,730	1,880
45-54	2,620	1,820
55-64	2,530	1,710
65-74	2,350	1,590
75 & over	2,100	1,530

Note that males in the 18-24-year-old age group have the second highest caloric intake, while females in this age group fall into the fourth highest rank. As the 18-24-year old age group expands, food requirements will rise. In other words, over the next few years, an age group with a high caloric intake will be expanding and inducing a strong demand for food.

By 1970, the 18-24-year-old age group will have the highest daily caloric intake of any age group in the country. Although this group, on a per capita basis, is not the leader in daily caloric intake, the rapid expansion in the number of 18-24-year-olds insures that by 1970 the 18-24-year-olds will be consuming more calories each day than any other age group in the country.

In addition, the 18-24-year-olds consume a different food basket than other age groups. Being of prime marriageable age and cost conscious, the food dollar of this group is spent on milk, baby foods, pre-packaged foods, and frozen foods. So-called gourmet foods and other fancy foods can hardly be expected to be found in the shopping carts of these young people, who, by and large, buy in the chain stores rather than in the small specialty shops.

BRINGING IT ALL TOGETHER

From autos to houses and even on to food intake, we have seen an evolving population distribution alter the demand curve of the American public. And by now it must be quite apparent that sales displays and marketing plans are going to be heavily blue-penciled over the coming months and years. A new market, the 18-24-year-olds, is burgeoning; and these customers are going to have to be treated as something new. This is, relatively speaking, a low income group that cannot afford to buy frills or overselling. But a carefully tailored marketing approach, that takes into account the income and spending habits of the 18-24-year-olds, will be successful in the Sixties.

To sum up the purpose of this article in a few words: A frequent, and perhaps the most costly, error in economic analysis is straight line extrapolation. In this scheme of things the Financial Analyst would say to himself: between 1950 and 1960, population grew by X percent; at the same time, the demand for various goods and services (housing, autos, education, medical care) grew Y percent. Therefore, to forecast the consumer's demand pattern between 1960 and 1970, I'll just extend all my lines out 10 years and merely read the answers.

This, unfortunately, is a mistake. The Analyst is forgetting that changes permeate the economy; that these changes react with and against each; and that this very process of interaction itself generates still more changes. In other words, not straight extrapolation, but an analysis and disaggregation of the underlying currents is *necessary* to forecast the economic mainstreams. In abstract language, that was the purpose of this article. In practical, every-day language, this article sought to highlight changing demand patterns based on an analysis of several underlying population trends.

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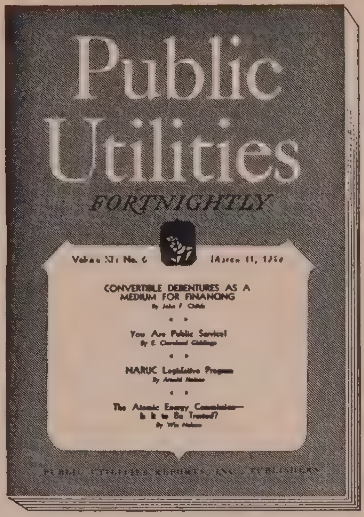

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JAPANESE SILK INDUSTRY

by George F. Ackerman

RECENTLY THE JAPANESE raw silk wholesale price reached a seven-year high of $5.20 a pound, New York. To indicate the precipitate rise, the January 1959 price was $3.65 and that of January 1960 $4.57. Comparing cumulative monthly average textile fiber prices for the period January-May 1961 with the comparable 1960 period—while viscose rayon staple was down 15%, raw cotton down 3%, raw wool down 6%—the raw silk price rose 16%.

This article attempts to look at some of the fundamentals of the Japanese silk industry. On the basis of the poundage price movement, is it correct to judge that the industry will return to anything like its former important role in the Japanese economy?

The Present Status

1. The Japanese silk industry is permanently shrunken in size.

2. Considering the tedious labor involved in sericulture [silkworm breeding for raw silk production] from the human welfare standpoint it is probably all to the good that synthetics have so largely replaced silk.

3. Actually, the development of synthetic fibers—in whose production Japan is today a leading manufacturer—prevented what would have been a most serious textile import drain on the Japanese economy.

4. Silk must look to the luxury type market for its future distribution, and the slow growth of this market would appear to assure the continued demand for silk.

5. Despite all the advances made in synthetic fibers, the physical absorption quality of silk continues superior to that of the competitive synthetics. Silk, in short, is another illustration of a "natural" product which has survived the introduction of directly competitive synthetic products.

A measure of how serious to Japan was the decline of this premier industry is supplied by some trade statistics. Value of raw silk exported for the average years 1934-1936 was $101.3 million. In 1960 the Japanese raw silk export value was $39.4 million, a decline of 61%. Adjusted for 1934-1936 dollars, the decline would be far greater.

Collapse of the Japanese silk industry is shown in *Table A*.

United States demand for raw silk declined precipitately over this same time period (471,163 bales, or 65.2% of Japanese production in average years 1934-1936, to 20,813 bales in 1947, 17.4% of production; and 48,806 bales in 1960, 16.2% of Japanese production). The American market for women's full-length hosiery had been undergoing a major revolution. In 1939, 82% of female hosiery was manufactured from silk; in 1951 less than 0.5% of American female hosiery was manufactured from silk. Nylon had captured 95% of the market.

> The extraordinary importance to modern Japan of sericulture is most forcibly described by William W. Lockwood in his book "The Economic Development of Japan":
>
> "Silk furnished a precious margin of money income for great numbers of peasant families—the more so as mulberries could be grown on land ill suited to food production and the rearing of silkworms required chiefly seasonal labor.
>
> "In foreign trade it provided Japan's premier export for over 60 years. Raw silk alone brought in more than one-third of her entire commodity export earnings in foreign markets through most of the years from 1870 to 1930. Nor is even this a measure of its value, since unlike so many of her manufactured exports it required no imported materials. Probably the raw silk trade financed no less than 40% of Japan's entire imports of foreign machinery and raw materials utilized domestically over this period. It only yielded its supremacy as synthetic fibers made progressive inroads in the American market after 1930. That the lowly silkworm should play such a massive role in Japanese industrialization is truly astonishing."

Synthetic fibers also, of course, cut into the cotton and wool markets but the greatest impact by far was felt by silk.

Unless a radical cost saving change should occur in the production of raw silk, and its supply at the same time could be increased at least fivefold, it is a legitimate conclusion that the Japanese silk industry is permanently shrunken in size.

Labor Cost High: 61%

It has been estimated that in the net cost of producing one kilogram of cocoons (the end products of sericulture) the direct labor cost is 61%.[1] Obviously, seri-

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[1] Footnotes appear at end of article.

culture technology would require a major change in the direction away from so much dependence upon labor to achieve a material and sustained lowering in the price of raw silk.

The amount of tedious labor involved in rearing the silkworms is staggering. Around-the-clock feeding of the silkworms lasts for about 42 days (there are four periods of sleep for the worms, 24 hours each, during the feeding period).[2] In the worms' final great feed they consume about 20 times their own weight in mulberry leaves. The rub, of course, is that the sericulturalist must select and pick by hand only tender mulberry leaves and feed these leaves to his "stock." The silkworm trays must also be cleaned twice daily.

Rearing of the worms normally occurs in a room specially set aside by the farmer. Careful temperature control of this room must be maintained at all times. Mulberry fields are cultivated three or four times a year, and in the Fall the branches of the mulberry trees are bound loosely together to prevent snow from breaking branches.

It is clear from this brief description of the time and skill involved in sericulture, not to mention disruption, of normal family living that this occupation is a distasteful one. Pressure to shift to other occupations must be great. The synthetics displacement of raw silks in the long run advanced the cause of human welfare in that the substitution of capital for labor in synthetic production reduced the need for a labor activity which was most onerous. (It is possible, we believe, that one could generalize upon the improvement in human welfare wherever a natural product, be it rubber, jute, wool, etc., has been displaced, at least in part, by its non-natural competitor).

Localization of Silk Production

The localization of silk production depends upon the growing conditions of the mulberry tree. The latter requires a warm, humid climate which allows a long season of leaf growth and the availability of a low cost, skilled labor supply. These fundamental conditions, with not too notable an exception, are only met in Asian countries. China and Japan are the principal raw silk producers, but there is some sericulture still practiced in Italy, France and the southern Caucasus of the Soviet Union.

Japanese sericulturalists suffered not only a sharp decrease in the demand for raw silk in the 1940's but an equally serious blow from the wartime forced program of converting land to food production from non-food production. To illustrate, mulberry planted acreage was 486,010 sq. miles in 1935 and only 173,313 sq. miles in 1955. Edward A. Ackerman, an authority on the economy of Japan, has concluded: "Japanese farm production of cotton, silk, wool, and other textile fibers will do well to hold its own, much less increase. The land requirements for increased natural fiber production would be too large to warrant solution of the fiber problem in this way."[3]

Table A

Japan — Raw Silk

(bales of 60 Kgs.)

Year	Production	Export	% Exports of Production
1934-36 Avg.	723,000	523,482	72.4
1947	119,773	17,273	14.4
1948	144,315	80,032	55.5
1949	175,375	48,663	30.9
1950	176,998	95,994	54.2
1951	215,268	71,270	33.1
1952	256,687	72,355	28.2
1953	250,721	63,859	25.5
1954	257,915	76,229	29.6
1955	289,476	86,712	30.0
1956	312,787	74,998	24.0
1957	314,775	73,886	23.5
1958	333,573	46,759	14.0
1959	318,677	89,577	28.1
1960	300,796	88,323	29.4

Sources: Japan's Postwar Economy, Cohen, Jerome B. (Indiana University Press, 1958); Silk Digest, March 1960 and March 1961.

The number of sericulture farmers decreased from 800,000 in 1955 to 670,000 in 1959. Cocoon production was 114,373 tons in 1955; 110,854 tons in 1959; and 111,208 tons in 1960, demonstrating a direct relation between the number of farmers and cocoon production. What is inducing the Japanese farmer to move away from sericulture in such large numbers in recent years? Previously, we sketched the adverse working condition as a factor making this pursuit unattractive. We now quote from Dr. Seinosuke Omura, chief of Sericulture Section, Raw Silk Bureau, Tokyo, in response to this very question: "The principal reason is shortage of labor, . . . In recent years, industrial plants are erected in rural districts and terciary industries are increasing in farm villages and agricultural labor is steadily absorbed in these fields. Rural young men in their twenties and householders in their thirties have a tendency to drift away from agriculture, and the labor situation in rural districts is changing rapidly. Sericulture requires a lot of labor and many farmers are obliged to discontinue sericulture."[4]

We consider that Dr. Omura's comments can be accorded authoritative weight. He has also stated that departure from the industry has been greatest where sericulture incomes constitute only a small percentage of the farmers' income.

A further contributing factor for sericultural decline is the growth in automatic reeling machines (364 in 1950 and 9,483 in 1960). Cocoon hand reeling has, through the years been an additional source of income for the sericulturalist but now this is even being seriously threatened through the inroads of the automatic reeling equipment.

Dr. Omura holds the hope that what he terms "rationalized sericulture" will result in a moderate increase in cocoon production. Such a practice would involve large-scale farming practices. But essentially the dependence upon substantial labor input remains, and this is the core of the problem. We are not too hopeful for any greatly stepped up raw silk production in Japan.

Silk—A Luxury Product

So long as silk sells for better than $4.00 a pound and cotton for 30¢ a pound and rayon for 30¢ a yard it is impossible that silk can serve anything but a luxury market. Indeed, the earlier experience of linen greatly parallels that of silk. At one time flax ranked with wool as the major textile fiber. The rise of cotton, which could be produced more cheaply, displaced flax in many of its household and industrial uses. Today, the fine linen market is largely restricted to world high income areas, and in particular the United States.[5] In line with this observation, we note that as Japanese national income has risen so too has Japanese domestic use of silk risen.[6]

A physical quality of silk, not as yet anywhere matched by synthetics, suggests that silk will have a permanent place in the textile field. We refer to the unusual absorption capacity of silk, greater by far than any other fiber. It is this absorption quality which permits silks to possess the vivid dyed colors not matched by other fibers. Silk can absorb one-third its own weight without changing shape.

Thus, despite the synthetic revolution in the textile field, the natural product has not been wholly displaced. Its role will be smaller, but it will have a role to play.

That Japan gained much more than it lost from the synthetic fiber revolution is indisputable. Dr. Jerome Cohen notes that "Rayon staple production in 1956 rose to 690 million pounds, up 360% from 1950. This figure far surpassed the totals of the United States and West Germany, making Japan the world's largest (rayon) producer."[7]

To clothe 90 million Japanese in silks would have required the conversion of all the land to mulberry production, and even this probably would have been insufficient. This is, of course, an extreme characterization, but it does demonstrate the proposition. Also, considering that the raw material base of rayon synthetics is pulp wood, and that Japan has a fair supply of this resource, the decline of its silk industry has been softened.

Footnotes

1. Sericulture in Japan, SCAP, Report Number 76, April 1947, p. 28.

2. Good discussions of raising and caring for the silkworms are to be found in the Encyclopedia Britannica and in Silk—Its Production and Manufacture, Hooper, Luther (Pitman I. Sons, Ltd., London, no date).

3. Japan's Natural Resources and Their Relation to Japan's Economic Future (University of Chicago Press, 1953) p. 359. Instance of jute varies from silk on the supply side. "The story of jute production is one of oversupply in a shrinking market." United Nations, Economic Survey of Asia and the Far East 1959, p. 73.

4. Silk Digest, No. 163, October 1960, p. 5. To be noted in this connection is the present Japanese government's new economic plan (known as "The Plan to Double the National Income") which provides for readjusting the geographical distribution of industry. Any success in the national plan obviously will cause a further drain on sericulture labor. For a very brief discussion of the new economic plan see "Economic Survey of Japan" in The Statist, June 3, 1961.

5. See Geography of Commodity Production, Highsmith and Jensen (Lippincott Company, 1958) pp. 152-153. See also Henry Aubrey's comment in his United States Imports and World Trade (Oxford, 1957) wherein he perspicaciously states, referring to wool: "the available supply and the price of substitutes can be expected to be more important determinants of future consumption than historical per capita figures and the rate of population growth," p. 125. See also Joseph Airov's comment: ". . . the high prices of silk in the pre-World War II period and of wool in the postwar period have been a lure to the developers of nylon and other synthetics." The Location of the Synthetic Fiber Industry (Technological Press, 1959) p. 19.

6. Japanese raw silk domestic deliveries 199,017 bales of 60 kgs. in 1955, and 256,913 bales of 60 kgs. in 1960: Source—Silk Digest, March 1961.

7. Japan's Postwar Economy, Cohen, Jerome B. (Indiana University Press, 1958) p. 64.

Leisure-Time Industry Growth Seen

An increasing population with a 50% rise in per capita income and a reduction in the work week to 34 hours by 1980 will mean more people spending more money for recreation to the expanding benefit of the leisure-time industry. Money spent on recreation has risen in the U. S. from 3% of total consumer expenditures in 1910 to 5.5% of the average $2,000 per capita income today, and will probably account for 6.6% of an average $3,000 per capita income in 1980.

In Western Europe the growth of expenditures for leisure time should show the same trend as in the United States. Wages are going up in Europe and labor is demanding and getting shorter hours as well, which means that major portions of the population, in England and Germany particularly, have surplus money to spend and are spending it. There is growing evidence that literally anything that is popular with the mass population in America will be popular in Western Europe.

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THE GOLD FLOW

by B. Barret Griffith

As OUR GOLD RESERVES continue to decline relative to the claims upon them, the conflicts of ideologies throughout the world intensify. This has apparently been the trend since 1949. (See table of gold reserves).

On the one hand, there appear to be some middle-aged economists and bureaucrats sponsoring all sorts of inter-governmental international banking institutions; on the other hand, there seems to be a growing ideology within the younger generation which favors hard-money and free markets as being in the best interests of all nations. The growing enthusiasm for conservative Senator Barry Goldwater may be symptomatic. Rejection of "free lunch" philosophies and acceptance of the more spartan-like free individualism may be indicative of what lies ahead when our younger people take over.

As claims increase on our gold reserves and our net gold reserves disappear, the prices of gold mining shares have been increasing. (See chart). This fact would seem to refute the monetary theories which have concluded that paper money would replace gold-backed money throughout the world. If gold and hard-money acceptability were disappearing, it seems unlikely that gold mining shares would have advanced in price.

As the availability of redeemable money has declined over the years, it seems that all kinds of conflicts throughout the world have increased, and peaceful, prosperous trade between individuals has declined. If trade between individuals is a continuous thing, it follows that the exchange of goods and service is either accomplished peacefully, or by force. Obviously, unless a common medium of exchange is available to all individuals, peaceful trade is impossible. Historically, gold has been the best medium of exchange throughout the world because it represents like-value to all peoples.

For some time now Americans have been awakening to the unpleasant fact that we are apparently becoming less able to compete in foreign markets with the goods and services we produce within the United States. More recently, we have become aware of the fact that we may be headed toward the resulting situation of becoming less able to buy goods and services from foreigners because we are losing the wherewithal to pay for imports. We are really becoming aware of high taxes, high debts and the depreciation that has occurred in the value of our dollar. Americans are wondering how they can pay higher taxes, assume additional debt, or endure further dollar depreciation. The date of decision on our monetary affairs, and the inevitable choice between soft-money and hard-money seems to be nearer at hand. Happily, the alternative decision to choose the gold standard and freedom of trade can be the most bullish political economic conclusion reached in many years.

My current optimistic opinion, that we will choose sound money and the peaceful exchange of goods and services over the alternative of more-managed paper

U. S. Gold Reserves vs. Requirements and Potential Claims—1922-1961
(In millions of dollars)

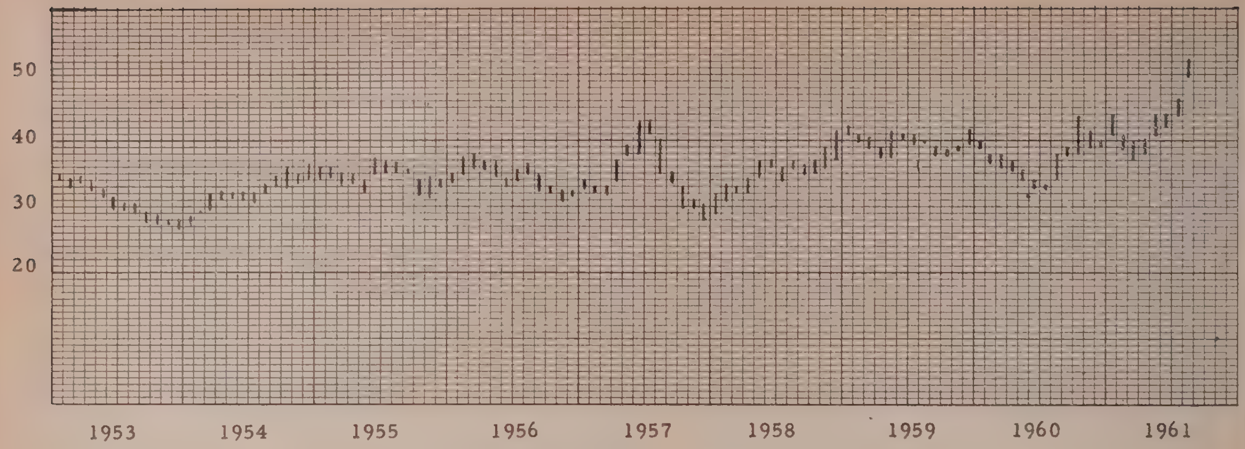
End of Year	U. S. Gold Reserve	A U. S. Required Gold Reserves	B Foreign Short-Term Dollar Balances	Total of A and B	% Claims to Gold
1922	$ 3,506	$ 1,686	$ 1,009	$ 2,695	76.9
1923	3,834	1,652	990	2,649	69.0
1924	4,090	1,599	1,237	2,836	69.3
1925	3,985	1,558	1,193	2,751	69.0
1926	4,083	1,564	1,639	3,203	78.4
1927	3,977	1,624	2,591	4,215	106.0
1928	3,746	1,621	2,673	4,102	109.5
1929	3,900	1,611	2,673	4,284	109.8
1930	4,225	1,562	2,336	3,897	92.2
1931	4,052	1,781	1,304	3,085	76.1
1932	4,405	1,967	746	2,713	61.6
1933	4,012	2,166	392	2,558	63.8
1934	8,259	2,729	670	3,399	41.2
1935	10,124	3,610	1,301	4,911	48.5
1936	11,422	4,101	1,623	5,724	50.1
1937	12,790	4,170	1,893	6,063	47.4
1938	14,591	5,099	2,158	7,257	49.7
1939	17,800	6,354	3,221	9,575	53.8
1940	22,042	7,897	3,938	11,835	53.7
1941	22,762	8,310	3,679	11,989	52.7
1942	22,739	9,977	4,205	14,202	62.5
1943	21,981	11,902	5,375	17,277	78.6
1944	20,631	14,350	5,820	21,170	102.6
1945	21,083	10,868	7,074	17,942	85.1
1946	21,706	10,731	6,481	18,429	84.9
1947	22,868	11,294	7,135	17,212	75.3
1948	24,399	11,894	7,756	19,650	80.5
1949	24,563	10,753	7,623	18,376	74.8
1950	22,820	11,055	9,222	20,227	88.6
1951	22,873	11,720	9,302	21,022	91.9
1952	23,252	12,055	10,731	22,786	98.0
1953	22,090	12,151	11,771	23,922	108.3
1954	21,793	11,812	12,923	24,735	113.5
1955	21,752	11,975	13,580	25,555	117.5
1956	22,058	12,120	16,428	28,548	129.4
1957	22,857	12,101	16,580	28,681	125.5
1958	20,582	12,036	17,637	29,673	144.2
1959	19,507	12,182	21,472	33,654	173.0
1960	17,804	11,882	*23,665	35,547	199.7
†1961	17,451	11,319	**24,342	35,661	204.3

†May.

*Includes $2,294 million foreign holdings of Government bonds and $800 million of debt to IMF which we must repay in gold at the $35 price, regardless of price of gold on repayment date.

**$2,473 million foreign holdings, etc.

B. Barret Griffith is associated with John H. Lewis & Co., resident partner at Colorado Springs. He is also author of the book "Investing is Adventure."



PRICES OF GOLD MINING SHARES

money and the exchange of goods by force throughout the world, comes from a rather intensive study of the flow of gold for some years.

Articles appearing in the *Financial Analysts Journal* since 1952, particularly the ones published in August, 1957, November, 1958, and November-December, 1960, which anticipated the monetary events to date, encourage this optimism. The United States and other nations (possibly even including nations in the Communist bloc) may be on the threshold of returning to Federal financial orthodoxy simply because they are not able to afford to do anything else.

Burdensome taxes, depreciating currencies and heavy debts are the situation worldwide. Solution is to be found only in expanding prosperous trade between individuals. This requires realistic reappraisal of the value of all currencies in terms of gold, and the return to individuals of the right to use good hard redeemable money in order to make business transactions and to trade with other individuals throughout the world.

Many forces seem operative towards establishment of a free gold market to determine today's currency values, and finally to expand trade between individuals. A chaotic depression is not necessary to bring about these better circumstances because America is now growing a very thoughtful generation, is the happy conclusion.

Dilemma of the Decade

When the pound sterling was *the* currency of world trade, in the 19th and early 20th centuries, an international gold standard was adhered to by all the active industrial and trading nations of the world. Under the rules of that game, each nation subordinated the stability of its own level of business activity and profits, its employment, its money supply of currency and deposits, and its interest rates, to the overriding consideration of developing such a balance between its international receipts and payments as would maintain the gold parity of its unit of currency with other currencies.

When the lights went out all over Europe in 1914, this smoothly working system came to an end. Efforts to restore it between the wars failed. For the most part from 1931 on, the world operated on a basis of economic nationalism or self-sufficiency. Each nation made such economic decisions as seemed desirable for its own internal economic and other objectives, and currency parity meant little in a world of make-believe currency parity or none at all, of multiple currency classifications for various purposes, under tight foreign exchange regulations and controls.

Without detailing the many steps which have since been taken, it suffices to say that the world has come a goodly distance back towards the relationships which functioned so smoothly under the old international gold standard. Far enough so that one of the many "Great Debates" of the 1960's seems likely to swirl around the question of how to retain the best elements of both systems, without suffering the disadvantages of either. Only those who still believe that there is such a thing as a free lunch expect this in full. For the rest of us the debate will turn on what are the most important results to obtain, and what are the costs which can best be paid to obtain them.—*Robert W. Storer*

PUGET SOUND POWER
& LIGHT COMPANY

Common Stock Dividend
No. 72

The Board of Directors has declared a dividend of 39c per share on Common Stock of Puget Sound Power & Light Company payable August 15, 1961, to stockholders of record at the close of business July 21, 1961.

J. H. Clawson
President

UNION CARBIDE

A quarterly dividend of ninety cents (90¢) per share on the outstanding capital stock of this Corporation has been declared, payable September 1, 1961 to stockholders of record at the close of business August 4, 1961.

John F. Shanklin
Secretary and Treasurer

UNION CARBIDE CORPORATION

Letters

Colored Money Still Possible

Editor:

Thank you very much for sending me copies of your editorial, "Renaissance of Our Paper Money."

I am grateful for your interest in the proposal to print currency in colors, but have no information to add to that already appearing in the newspapers. It was erroneously reported that Secretary Dillon had referred the matter to the White House for a decision. Treasury officials are still studying the feasibility of the idea and a decision probably will not be made for several months.

In the meanwhile, we are compiling the reactions and opinions received from the general public, and find they are running four-to-one in favor of the plan.

Elizabeth Rudel Smith
Treasurer of the United States

(We compared the signature with the signature on a new one-dollar bill. The letter is bona-fide—Ed.).

* * *

More About Computers

Editor:

In an intriguing article titled "Tomorrow's Investment Information Tonight" Lawrence W. Conant boldly speculates about electronic computers and their possible value as an aid to security analysis. (Lawrence W. Conant, "Tomorrow's Investment Information Tonight," Financial Analysts Journal, March-April, 1961). While some of Mr. Conant's proposals are probably visionary, it is surely not too soon for Financial Analysts to seriously consider the usefulness of these amazing calculators.

Most doubtful of the proposals mentioned is the notion that it would be desirable to attach a larger package of information to each transaction occurring on our major stock exchanges. Even if the cost of sending redundant information—which does not change as rapidly as price—were zero, one would still have to measure its worth in terms of timeliness. Given the capacity of existing teletype channels and the backlog of information which sometimes piles up on the New York Exchange, it would appear most unwise to add more information to an already over-congested network.

Mr. Conant's proposal to convert stock news to relative orders of magnitude is much more worthy of serious consideration. The problem, however, is that percentages are not unambiguously better than absolutes. So long as stocks are sold by the share rather than by the dollar's worth, the price per share will continue to be a pertinent bit of information.

While no one would probably consider a price movement of one-eighth of a point exciting, it would appear that way if the stock were selling for less than $5.00 per share and the movement was expressed as a percentage. Since the act of percentaging is basically a rather trivial operation —which can easily be performed by human or mechanical calculators—the relativity convention would probably already have been adopted if it were generally regarded to contain more or better information.

While it might be as serious a mistake to dismiss entirely the possibility of improvement, as to ignore the virtues of existing data arrays, it does not seem likely that computers will "revolutionize" the daily financial page. Innovations with regard to weekly stock summaries are more likely, but in view of the advantages and disadvantages of any particular statistic, probably depend upon the willingness of newspapers to enlarge the financial section.

My purpose in emphasizing that percentages should be interpreted by making an allowance for differences in underlying absolutes, is not to disparage either relative information or the desirability of having a more timely and comprehensive merging of fundamental and technical information. Rather, it is to suggest a need for an investment service dedicated, not to forecasting, but to processing in a more complete fashion supplementary statistics which are of interest primarily to the Financial Analyst and the investor who likes to do his own analysis.

If the emphasis is placed upon a more specialized processing service, Mr. Conant's suggestions barely begin to outline the possibilities opened up by electronic computers. More exciting, perhaps, than up-to-the-minute percentages, is the equally feasible possibility of programming computers to provide rank order information for, say, the 1,500 or so stocks traded on the New York Stock Exchange. In addition to the latest price-earnings ratio, one could as easily have price expressed as a ratio to average earnings in the last three years — which many Analysts consider a better indicator of value than the current price-earnings ratio—plus a measure of the trend in earnings over the last seven or eight years, together with corresponding rank information for each of these three variables, classified by industry and exchange.

Equally feasible, though perhaps less in demand, would be the calculation of variance statistics and correlation coefficients. Indeed, inasmuch as the ability of electronic computers to perform tedious calculations is very great and the urgency of merging fundamental and technical information not very pressing (once a week would probably be sufficient), the limiting factor would appear to be the tolerance of Analysts for complexity together with a demonstration that a particular statistic is useful in determining the intrinsic value of a security.

Inasmuch as computers can only do what they are told or "programmed" to do, and since every statistic has its advantages and disadvantages, it's most unlikely that data processing equipment will ever replace the judgment of a competent Financial Ana-

FIFTEEN YEARS AGO IN THE JOURNAL

"Stocks seldom sell at their book values, but usually considerably above or below. One can form a pattern, therefore, by contrasting a stock's book value, traced over a period of years, with its market value. These patterns can be very individual and strong. Some stocks form patterns of selling above their book values and some of selling below, which become so well defined that they might almost be considered part of their inherent, pragmatic assets or liabilities. . . .

"The intangible factors can be plus or minus; that is, they can cause stocks to sell for more or for less than their book values. But they cannot cause them to sell for more or less without limit. Minus values have helped press U. S. Steel down to almost one-tenth its book value but never to nothing at all, and, as already noted, plus factors cannot go on multiplying indefinitely without creating per share valuations which are absurd. Therefore, since there are limits, there may be a statistical method of describing them. . . .

"The general level of the stock market is of course also a controlling factor, though perhaps less so than one might at first think. Coca-Cola, Philip Morris and Pepsi-Cola are examples of stocks that have shown a great deal of independent market action in the past. Although general market forces are certainly among the factors the Analyst must consider in measuring the possible amplitude of a stock's upward movement, more important may be the size of the book value, the inherent ability of the company to do business on a certain amount of capital, and the factor of the recognition period."

—Walter K. Gutman.

lyst. What is to be hoped for is that it will free him from routine clerical comparisons and thus enable him to concentrate more attention on matters which either cannot be quantified or are not expected to behave in the manner of past averages.

Edward F. Renshaw
University of California

* * *

Somewhat in Disagreement

Editor:

The article entitled "Freight Traffic on the Ohio River" by Dr. Charles Landon in your May-June, 1961 issue, was couched in a generally "friendly to the industry" vein. For that reason we hesitate to criticize. There are, however, one or two areas requiring comment.

1. Dr. Landon's statement that proposed improvements on the Ohio River will reduce transportation costs as much as 50% reflects the use of figures developed several years ago but subsequently found to be overly optimistic. Recent extensive technical and economical studies by unbiased experts indicate that a maximum reduction of 25% in costs can be expected and this total amount only upon full completion of the projected program. This is not expected to occur prior to 1980-85. Information contained in responsible journals such as yours can influence the thinking of persons engaged in buying transportation. Overstatement of savings involved, even made inadvertently, can adversely affect the bargelines' position.

Southern California Edison Company

DIVIDENDS

The Board of Directors has authorized the payment of the following quarterly dividends:

ORIGINAL PREFERRED STOCK
Dividend No. 209
65 cents per share;

CUMULATIVE PREFERRED STOCK,
4.32% SERIES
Dividend No. 58
27 cents per share.

The above dividends are payable September 30, 1961, to stockholders of record September 5. *Checks will be mailed from the Company's office in Los Angeles, September 29.*

P. C. HALE, *Treasurer*

August 17, 1961

Edison

2. While Pennsalt Chemicals does own property, containing flour spar, adjacent to Calvert City, other considerations entered into the location of that plant, among these being cheap power and the presence of an on-site market for some production. Pennsalt has used barge transportation from the inception of operations.

3. One of three aluminum producers mentioned uses river transportation directly. Only the threat of river transportation is used by the others as an effective lever to depress rail freight rates. In so doing, these two companies have enjoyed lower than average rail rates and, in fact, there is reason to believe that in one instance the rail rates are below cost.

4. Cincinnati's new industry, while not using river transportation directly, avails itself of one of the lowest commercial power rates in the country, this rate being the result of low fuel costs centering around efficient river transportation.

5. Your editorial comment supporting User Charges, while obviously sincere, contradicts itself. The "prosperous section of our economy" referred to happens to be the segment paying the bulk of our taxes. Industries which located in the Ohio Valley because of the availability of water resources, efficient transportation, etc., do not feel that they should be called upon to pay again and again for that which their taxes provided in the first place.

H. C. Downer, President
The Ohio River Company

Editor's note: Mr. Downer's defense of shippers utilizing inland waterways objecting to imposition of user charges seems rather specious.

At first glance, these shippers do appear to be saddled with taxes sufficiently high to pay for such facilities as provided. Yet, such is not the case. The original cost of all channels, plus all locks, together with annual maintenance for dredging the channels, are saddled not only upon the users of such facilities but on 180 million citizens of the United States as well, including other industries far removed from the waterways and not using these facilities.

The railroads appear to occupy an unenviable position, they being heavily taxed on all of their physical facilities including those paralleling these subsidized waterways, with a portion of their taxes being allocated to provide both original cost and maintenance of such facilities for their heavily subsidized competitors who have taken a large proportion of freight formerly hauled by the carriers.

Were all users of these facilities taxed in accordance with their use, on a basis of amortizating original cost of channels and locks, as well as absorbing the annual cost of maintaining these channels at the required depth, then the community at large would no longer be forced to subsidize "the prosperous section of our economy."

Admittedly, the tax payments of these shippers do loom large and represent a sizeable percentage of all total corporate taxes paid in the United States. However, these tax payments do not by any stretch of the imagination represent taxes on facilities pertaining to waterways so that it is inaccurate to say, as does Mr. Downer, that this prosperous section of our economy is a segment paying the bulk of our taxes. The bulk of United States taxes, perhaps yes. The bulk of taxes pertaining to the cost of waterways, a resounding no.

Ultimately as our country brings order out of our present transportation chaos, inland waterway shippers will have to pay user charges on these tax-free facilities provided them by all taxpayers. Voluntary acceptance of such charges would seem more statesmanlike at the present time than waiting until governmental costs will force a broadening tax base to include such shippers. And may we conclude that our observations here are made with kindness aforethought.

In Memoriam

Merle J. Bowyer, vice president and a director of Braun, Bosworth & Co., Detroit, died July 3. A member of The Financial Analysts Society of Detroit, Mr. Bowyer had been associated with Braun, Bosworth for 12 years.

Prior to this connection he was manager of the bond department of Paine, Webber, Jackson & Curtis' Detroit office. Surviving are his wife Marion; two daughters, Mrs. H. E. Wuesthoff and Merlynn; two sisters, two brothers and two grandchildren.

* * *

Roy L. McPherson, professor of finance at Southern Methodist University, Dallas, died earlier this year. A member of The Dallas Association of Investment Analysts, he is survived by his wife, Gertrude Elizabeth, and three daughters.

Brokers Hire More Analysts—See Growing Impact on the Market

By **JOHN H. ALLAN**

Staff Reporter of The Wall Street Journal

New York — Security analysts are playing a steadily expanding role in the stock market these days.

Analysts work chiefly for brokers, though some are employed by banks, mutual funds, investment bankers and insurance companies. Their job is to scrutinize corporate balance sheets, prowl plants and pump executives in the hope of gleaning facts bearing on future earnings and stock prices.

A survey of brokerage firms indicates analysts' ranks are swelling rapidly, not only here but in brokers' offices around the nation. And, many securities-business authorities contend, analysts' work is having an ever widening impact on the stock market, bringing less reliance on inside "tips" and studies of market fluctuations and more dependence on meticulous research into a corporation's performance.

All this draws snickers of skepticism from some veteran stock traders. They scoff at attempts to introduce a "scientific" element into what they deem an extremely imprecise art. They gleefully pounce on analysts' mistakes, such as a recent series involving Montgomery Ward & Co. Between late 1959 and the middle of last summer, security analysts of at least 16 important brokerage firms recommended that their clients buy the giant retailer's shares. Then, in August, Montgomery Ward halved its dividend, with the result the stock skidded to around $25 a share, compared with a high of over $53 earlier in the year.

A Higher Batting Average

Analysts are quick to concede their brand of research is still not a science. But they insist their efforts can lead to more correct judgments about securities than other methods and assert their investigations can at least minimize investors' mistakes. "The batting average of a security analyst should be higher than the non-analyst's," observes William I. La Tourette, research partner at Shearson, Hammill & Co., a New York broker. "Otherwise, maybe he should be a non-analyst."

Many large brokerage firms are adding to their research staffs. Giant Merrill Lynch, Pierce, Fenner & Smith, Inc., for example, had 105 security analysts at the close of 1960, up from 63 five years earlier. Bache & Co. has boosted its research staff to 50 from 30 five years ago, and Goodbody & Co. says its analytical staff of 24 is "almost double five years ago."

Causing this growth, among other things, is a spectacular increase in the number of shareholders in the U. S. According to a 1959 New York Stock Exchange count, 12,490,000 Americans owned stock, nearly double the 6,490,000 in 1952. With swarms of these fledgling investors seeking expert advice and information on companies, brokers have had to beef up their research departments. Merrill Lynch is generally credited with speeding this trend. "Merrill Lynch educated the small investor to expect research," says a competitor. Adds another: "We have to offer what Merril Lynch does or lose business."

More Data to Analyze

Other factors contribute to the emphasis on research. The rising number of publicly held corporations, along with the esoteric nature of some new fields, such as the electronics industry, make it increasingly difficult for the average investor or broker to evaluate all investment opportunities. And the amount of information made available by companies has grown markedly in the last quarter century, which means more data is available for analysts to analyze.

What does a brokerage house security analyst do? Luttrell Machlin, a partner in the brokerage firm of Paine, Webber, Jackson & Curtis, suggests that the work of a stock analyst is much like that of a newspaper reporter, with one big difference: The analyst must go one step beyond reporting and make a judgment about the future earnings capability of the corporation he's examining.

Part of an analyst's work is simply to keep tabs on developments that affect the prospects of large, widely held companies whose fortunes are of interest to many of his employer's clients. But much of his investigation is aimed at uncovering attractive stocks that the market seems to be overlooking. These securities often fall into the category of "growth issues," stocks of companies whose sales and earnings, the analysts believe, are likely to expand at a faster rate than the general economy. In recent years, International Business Machines Corp. and a number of electronics issues have been prime examples of growth stocks.

Making Money on Monterey

"Special situations" constitute another group of stocks for which analysts are constantly on the alert. These are issues the analysts believe would jump in price immediately should certain information become generally known. Many factors can create these opportunities for profit—ownership by a firm of a tract of real estate which has soared in value, possession of a key patent or perhaps the prospects of a merger. By way of illustration, at least two oil stock analysts spotted a special situation in Monterey Oil Co. stock. On the basis of their knowledge of the trend in the industry for large concerns to take over small producing outfits and from information obtained from corporate contacts, they concluded a major oil company was likely to purchase Monterey, paying considerably more than the market price of the stock. In the spring, when Monterey stock was selling for around $30 a share, they recommended its purchase. Humble Oil & Refining Co. subsequently acquired Monterey for $42 a share.

To see how an analyst goes about gathering the multitude of facts on

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This article, originally published by the Wall Street Journal, Feb. 23, 1961, is reprinted here with permission—Ed.

FOR ANY BROKER WHO KNOWS THE VALUE OF PUBLIC RELATIONS

As a broker, the bluest chip investment you have to sell to every investor is essentially good will. The value of public relations—the enduring relations you are able to establish with every one of your customers—can be priceless. You may pooh-pooh the idea that a single sheet of paper can help you accomplish this, but it can . . . and you can prove this to your own satisfaction or it won't cost you a penny. Have your secretary write to us for a copy of the S & S Stock Record Form and the sporting proposition that will accompany it. Said one broker's customer: "Because of your form, I have been congratulated by my tax attorney."

SCHNEIDEREITH & SONS
Dept. FJ-1, 206-210 S. Sharp St.
Baltimore 1, Md.

which he bases his judgments, watch William Kurtz, 38-year-old assistant director of research at Paine-Webber in action. Like most analysts, Mr. Kurtz specializes in a few industries; his particular interests are electronics, electrical equipment, chemicals and drugs.

A massive amount of reading is required of all analysts. For Mr. Kurtz, a short, stock man with an ebullient nature, this chore begins when he sinks onto his seat on the 7:47 out of Garden City, L. I., each weekday morning. As the train rolls along, he reads both the New York Times and the New York Herald Tribune, taking special note of the general news which could have an impact on stocks and then moving on to the business pages. There he red-pencils items pertaining to companies he follows; his secretary later clips and files these. Arriving at his lower Manhattan office shortly before 9 a.m., he sits down with a glass container of lukewarm coffee and The Wall Street Journal, continuing to mark stories of interest to him. A bookshelf in his office is piled high with copies of other publications he reads in free moments during the day.

Picking Brains

Coffee finished, Mr. Kurtz plunges into the morning's principal project, determining the "market potential" of the purchase by Ward Industries Corp., a diversified concern whose interests include ocean shipping and the manufacture of dry-cleaning equipment, of a 50% interest in a company that licenses a new food-freezing process using liquid nitrogen as a refrigerant. For Mr. Kurtz, whose training was in business and economics, the starting point is to pick the brains of technical men familiar with the process. Many brokerage firms retain scientific consultants to aid them in evaluating new products and processes. Mr. Kurtz can call on a pharmacologist to answer his questions about new drugs, for instance, and to learn more about freezing technology he checks by phone with a chemist at Arthur D. Little, Inc., a Cambridge, Mass., research and consulting firm. One concern is whether liquid nitrogen can be produced cheaply enough to make the process widely applicable.

In their quest for information, analysts seek face-to-face chats with company officials and tours of labs and plants whenever possible. This generally means considerable travel; many analysts spend up to 15 or 20 weeks a year on the road. In the case of Ward Industries, however, Mr. Kurtz avoids a trip, because Niels Gammeltoft, a vice president, has his office only a short walk from Paine-Webber. Mr. Kurtz devotes the rest of the morning to a two-hour talk with Mr. Gammeltoft. Taking notes on a large yellow pad, Mr. Kurtz keeps up a steady stream of questions: What's the cost of building a plant using the process? Have technical problems been solved? Have any major food processors looked into the system?

By the time he's back at his office, Mr. Kurtz has reached a tentative conclusion on Ward Industries. The process is "much too speculative for a general Paine-Webber recommendation," he comments. "At this stage we'll just watch it."

A Flood of Words

After a shop-talk lunch with two fellow employees, Mr. Kurtz turns to another major phase of his job—preparing publications. Research departments such as Paine-Webber's pour out a flood of material, including daily stock news letters, weekly and biweekly reports, monthly reviews of trading and corporation studies which vary from brief jottings cribbed from statistical manuals to comprehensive analyses up to 60 pages long.

As assistant research director, Mr. Kurtz guides younger staff members in writing reports. On this particular afternoon, he discusses the outline of a study of Celanese Corp. of America with the man who will write it, Thomas Owen, a young analyst who's learning the chemical securities beat. "Celanese is related in the public mind to the rayon-acetate group of companies," cautions Mr. Kurtz. "That may have been true seven or eight years ago, but now the company's efforts have been re-directed toward the chemical industry. Highlight this shift, point to growth in plastics sales as a percentage of total volume, mention its diversification in fibers and put in 1960 earnings and 1961 estimates. And let's try to arrive at a realistic growth rate for the company over the next five years."

As is true of the whole day, the session on Celanese is punctuated by queries from Paine-Webber offices in other cities sent via the firm's private wire network. Several questions relate to possible price changes in General Electric Co.'s stock as a result of its recent antitrust troubles. One branch manager asks Mr. Kurtz's views on a

P. Lorillard Company

AMERICA'S FIRST TOBACCO MERCHANTS • ESTABLISHED 1760

OLD GOLD *Straights* KING SIZE · NEWPORT FILTER CIGARETTES KING SIZE · KENT · *Mild* SPRING *Filters* KING SIZE CIGARETTES · OLD GOLD SPIN FILTERS KING SIZE

DIVIDEND NOTICE

Regular quarterly dividend of $1.75 per share on the Preferred Stock and regular quarterly dividend of $.55 per share on the outstanding Common Stock of P. Lorillard Company have been declared payable October 2, 1961, to stockholders of record at the close of business September 8, 1961. Checks will be mailed.

G. O. DAVIES
Vice President and Treasurer

New York, August 16, 1961

First With The Finest—Through Lorillard Research

Cigarettes

OLD GOLD STRAIGHTS
Regular
King Size
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King Size

KENT
Regular
King Size
Crush-Proof Box

NEWPORT
King Size
Crush-Proof Box

SPRING
King Size

EMBASSY
King Size

Smoking Tobaccos
BRIGGS
UNION LEADER
FRIENDS
INDIA HOUSE

Little Cigars
BETWEEN THE ACTS
MADISON

Chewing Tobaccos
BEECH-NUT
BAGPIPE
HAVANA BLOSSOM

Turkish Cigarettes
MURAD
HELMAR

large missile company. Noting he has reservations about the wisdom of investing in it now, he observes: "The stock's been popular recently, but all companies with big weapons systems are vulnerable to changes in Government spending decisions."

Swapping Information

There are also frequent phone calls. Some are from large Paine-Webber customers, such as a long-distance call from an Ohioan with a question about Cenco Instruments Corp. But several come from analysts employed by rival brokers, for analysts generally exchange information freely among themselves. In a brief period of the afternoon, Mr. Kurtz discusses chemical company prospects with one fellow analyst and talks with another about Fairchild Camera & Instrument Corp., General Time Corp. and Radio Corp. of America.

Analysts' fraternal spirit also manifests itself in the organizations they have formed in many cities. These analysts' societies hold regular luncheon meetings at which corporate officials discuss their companies' prospects. Mr. Kurtz belongs to the 2,500-member New York Society of Security Analysts and attends the lunches whenever an executive of one of the companies he covers is speaking.

At 4:45 p.m., Mr. Kurtz heads uptown by subway to the Waldorf-Astoria hotel for a dinner meeting with Lester Avnet, president of Avnet Electronics Corp., a company listed on the New York Stock Exchange. Over highballs in Mr. Avnet's 15th floor suite and later over dinner in the hotel's Peacock Room, the two men review the company's operations and arrange for a Paine-Webber consultant to visit an Avnet plant. At 10 p.m. Mr. Kurtz hails a cab to Penn Station. By 11:15 he's home in Garden City with time enough to watch Jack Paar and glance at an IBM earnings report before dropping off to sleep.

There's evidence that analysts such as Mr. Kurtz have considerable power to influence investors. When a number of analysts recommend a stock, a substantial jump in price frequently follows. "A flood of circulars from analysts on one company has a concentrated effect, especially with a thin supply of stock," says one research department chief. Fairchild Camera Instrument Corp. stock is frequently cited as an example of this phenomenon. From a 1959 low of $25 a share, Fairchild ran up to a 1960 high of over $200 a share. Though the company's spectacular growth was undoubtedly the major factor in the price increase, it's generally agreed repeated recommendations by security analysts sped its rise. Fairchild has since dropped back to $142 a share.

Cautions Merrill Lynch

Merrill Lynch, with 141 branch offices, is unusually conscious of the broad impact its recommendations can have. James Corbett, a vice president, says the firm has "rigidly observed rules" to prevent disrupting the market. Before a report or "flash" is sent out, Mr. Corbett phones the floor of the exchange to ascertain whether enough stock is available to take care of any ensuing orders. A small supply stops the wire.

Some recommendations to buy turn out to be wrong, of course, and the stock drops in price. The analysts' solution in such cases is usually to recommend a "switch" to another stock. Advice simply to sell is rarely given, because, brokers explain, it's bad for their business; idle cash in a customer's account will often be quickly siphoned over to a broker who has a stock to recommend.

Many brokers contend one effect of the new stress on security analysis is to make the stock market more "selective." They mean more stocks or groups of stocks are likely to be found following a course different from the general market averages. This tendency stems in part, some brokers suggest, from many analysts' habit of paying little attention to the action of the market as a whole and to concentrate on investigations of single stocks. "The market is neither all bull nor all bear," says Ralph Rotnem, research chief at Harris, Upham & Co., a brokerage firm. "This lack of togetherness is due to better analytical work."

As the security analysis field has grown in size and stature, standards for its practitioners have also tended to rise. A master's degree in business administration or economics is frequently a prerequisite for a position on the research staff of a brokerage house. Holders of advanced degrees from the business schools of well-known universities are especially in demand. Pay for junior men with a modest amount of practical experience ranges from $8,000 to $12,000 a year. Senior analysts' generally earn between $12,000 and $20,000 annually, though a few make as much as $25,000 [—And much more!—Ed.].

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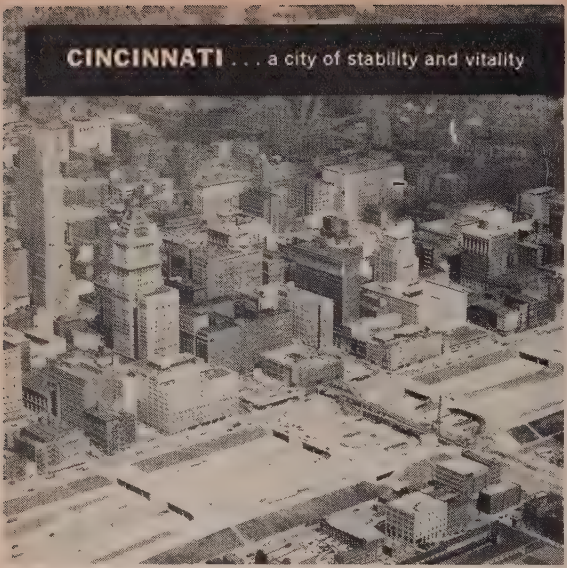
DIVIDENDS PAID ON THE COMMON STOCK CONTINUOUSLY FOR MORE THAN HALF A CENTURY—ALWAYS EARNED—NEVER REDUCED.

	1961	1960
Operating Revenues—Electric	$118,118,000	$116,154,000
Gas	58,845,000	54,935,000
Steam	2,411,000	2,350,000
Total Operating Revenues	$179,374,000	$173,439,000
Total Operating Expenses	148,876,000	145,499,000
Operating Income	$ 30,498,000	$ 27,940,000
Other Income	577,000	654,000
Gross Income	$ 31,075,000	$ 28,594,000
Total Income Deductions	8,393,000	7,276,000
Net Income	$ 22,682,000	$ 21,318,000
Preferred Stock Dividends	1,279,000	1,279,000
Balance Available for Common Stock	$ 21,403,000	$ 20,039,000
Earnings Per Share of Common Stock	**$1.53**	**$1.43**

BALTIMORE GAS and ELECTRIC CO.



Ahead of schedule: this **$300,000,000** new look in the city closest to America

Look down. South toward the Airport. East. West. Out toward the spreading suburbs to the North. Everywhere you see concrete evidence of the Cincinnati Industrial Area's vigorous answer to the challenge of the '60's.

You see traffic already streaming over broad new expressways that keep growing mile by mile. You see vast acres adjacent to downtown Cincinnati now cleared of slums, ready for planned new apartments, office buildings and plants. You see what more than a quarter of a billion dollars in federal and local funds are doing to give Cincinnati the newest look in America by 1962.

You see evidence that private capital has been busy, too. In the past 10 years, over fifteen billion dollars have been poured into a 1,000-mile stretch of the Ohio River valley by new and expanding industries. And over $571,000,000 of it has gone into capital investments in the Greater Cincinnati Industrial Area.

Among the Area's powerful attractions has always been adequate power. The Cincinnati Gas & Electric Company has invested $300,000,000 in the past 10 years to keep ahead of the Area's expanding gas and electric needs. These needs are expected to double again in the next 10 years. The company will be ready.

The Cincinnati Gas & Electric Company

The Union Light, Heat and Power Company

Serving homes and industry in the Greater Cincinnati Area with an adequate and dependable supply of gas and electricity

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PHILIP MORRIS

INCORPORATED

COMMON STOCK DIVIDEND

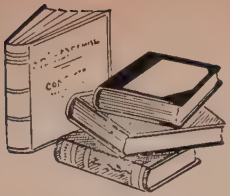
A regular quarterly dividend of $0.90 per share on the Common Stock of the Company has been declared payable October 16, 1961 to holders of record at the close of business on September 19, 1961.

PREFERRED STOCK DIVIDEND

A regular quarterly dividend of $1.00 per share on the Cumulative Preferred Stock, 4% Series, and a regular quarterly dividend of $0.975 per share on the Cumulative Preferred Stock, 3.90% Series, have been declared, both payable on November 1, 1961 to the respective holders of record at the close of business on October 16, 1961.

JOHN E. COOKMAN,
Treasurer

New York, N.Y.,
Aug. 30, 1961



BOOKS for ANALYSIS

Money and Credit. Their Influence on Jobs, Prices and Growth. The Report of the Commission on Money and Credit. Prentice-Hall, Inc., Englewood Cliffs and New York. $3.95.

Reviewed by Alan C. Poole
Hemphill, Noyes & Co.

Not recommended for the casual reader, this opus should prove extremely valuable for the serious student who is vitally concerned with money and credit problems as they exist today.

The Commission, finally made up of 20 members after resignations, deaths and replacements, represents a good cross-section of people who should be concerned with this vital problem of money. The body of the committee consists of six bankers, five corporate executives, three labor representatives and two educators. The other four members are one lawyer, one insurance executive, one representative of farmer interests and a retired business executive. In spite of the fact that the panel appears to be made up of a majority of free entrepreneurs both sides of the picture are clearly presented, and lengthy minority opinions have been footnoted throughout the report. Therefore, the discerning thinker may weigh the findings carefully and draw his own conclusions.

Subject coverage is broad in the report, surprisingly so in fact when one considers that it takes up only 282 pages. After dealing with the nation's National Economic Goals there is a detailed examination of our monetary policy, the public debt, fiscal policy, operations of our private financial institutions, federal credit programs and international monetary relations. Such vital topics as federal credit agencies, an unbalanced budget, foreign aid, international trade and the gold situation are all covered thoroughly.

The report, though highly concentrated, takes up each problem individually explaining the operations as they exist today. Once the background has been laid out, the Commission either comments on the problem or makes specific recommendations. Where certain members differ, minority reports are presented in rather concise fashion. These appear frequently in footnotes.

This report is not one to be read over lightly. It requires careful study and a good deal of time to get the meat out of it. Furthermore, it serves as an excellent reference manual. For the average financial reader this study may be too heavy and too time consuming; but for the individual truly interested in the monetary problems it is practically "must" reading.

* * *

American Management Abroad—A handbook for the business executive overseas. By George D. Bryson. Harper & Brothers. 225 pages. $5.

Reviewed by Ray Vogel
Harris, Upham & Co.

For the company interested in operating in other countries, George D. Bryson has prepared a readable guide to the important considerations in selecting a staff to be sent abroad. He also discusses training and the various problems of operating out of the country.

Mr. Bryson is well qualified to advise since he organized and developed the International Division of General Foods Corporation in 1953 and he served as a corporate vice president and the general manager of that division. Prior to his work with General Foods, he was a vice president of Young & Rubicam, working in both New York and London.

Mr. Bryson is a consultant to many American as well as Italian business firms. This book is timely in view of news articles indicating that private American investment abroad increased by a record of $5.5 billion last year, raising the the total to a new high of $50.3 billion. In Europe direct investments increased in 1960 by $1.2 billion to reach a peak of more than $6.6 billion. Of the total investment approximately one-third was in the Common Market countries — France, Italy, Germany, the Netherlands, Belgium and Luxembourg.

Mr. Bryson explains the qualifications and preparation for a foreign manager. He lists 10 different important key points which should be reviewed by every major company prior to sending a man abroad. These are based on a list prepared by Mark W. Cresap, Jr., president of Westinghouse Electric Corporation.

One of the important ideas presented is that a man going to a particular country should know the language and should know how to

Public Service Electric and Gas Company
NEWARK, N. J.

QUARTERLY DIVIDENDS

The Board of Directors has declared the following dividends for the quarter ending September 30, 1961:

Class of Stock	Dividend Per Share
Cumulative Preferred	
4.08% Series	$1.02
4.18% Series	1.045
4.30% Series	1.075
5.05% Series	1.2625
5.28% Series	1.32
$1.40 Dividend Preference Common	.35
Common	.50

All dividends are payable on or before September 30, 1961 to stockholders of record August 31, 1961.

J. Irving Kibbe
Secretary

NJ PUBLIC SERVICE
CROSSROADS OF THE EAST

entertain properly and fit into the social life of the country. "Even in England," he claims, "there is a language problem with the average American." In many important respects a different language is spoken in the British Isles.

"Men and women living abroad will be more happy and successful if they learn the language. They will be more acceptable if they at least make an effort." Too many foreign assignments are presented to the man who is a misfit and to the man who is retained rather than replaced. He is on the brink and is "sent to Siberia" by being given a foreign assignment. This is one of the unfortunate errors which is frequently made. A foreign assignment should not have any illusion of being an easy job. Living in a foreign country calls for the right mental attitude, and an American has a very important standard to represent. Occasionally an American "goes native" and he appears ridiculous to foreigners.

ROCKWELL R STANDARD ANNOUNCES . . .

- CENTRAX LTD. TO MAKE R-S AXLES IN GREAT BRITAIN
- 2nd QUARTER NET 40% ABOVE 1st
- REGULAR DIVIDEND DECLARED

The Board of Directors has today declared a regular quarterly dividend of fifty cents (50¢) per share on the Common Stock of the Company, payable September 10, 1961, to shareholders of record at the close of business August 17, 1961.

A. A. Finnell, Secretary

July 24, 1961

Rockwell-Standard serves:

Transportation • Construction
Agriculture • Petroleum
Public Utilities • General
Industry and Government

Rockwell-Standard produces:

Axles • Transmissions
Torque Converters
Leaf and Mechanical Springs
Bumpers • Cushion Springs
Brakes • Forgings • Stampings
Grating • Universal Joints
Executive Aircraft
Lighting Standards
Gas and Liquid Filters

ROCKWELL-STANDARD CORPORATION

CORAOPOLIS, PENNSYLVANIA

Finally we would say that every important aspect of foreign management is well covered by Mr. Bryson. We feel his book serves an important function with the growing market for American industry in the free world.

* * *

ECONOMIC FLUCTUATIONS AND FORECASTING. By Edward J. Chambers. Prentice-Hall, Inc., Englewood Cliffs, N. J., and New York, N. Y. 624 pages. $7.50.

Reviewed by Frances Haidt Herzig, Farber & McKenna

The increasing number of information gathering satellites has not as yet, it would seem, improved the weatherman's daily batting average. The business of forecasting—be it weather or economics — has, however, advanced over the years from the irrational and mystical procedures of earlier prophets to the more mathematical methods and statistical theories of today's Financial Analysts.

Despite this scientific approach, forecasting remains an art, in which *the element of judgment is of vital importance.* This elusive quality should not be interpreted as simply an intuitive process. Good judgment is derived primarily from an objective analysis of all available quantitative data and qualitative evidence in a variety of categories, and from numerous sources. In part, it reflects a knowledge of events and evaluations preceding present conditions. In part, it is the recognition of human factors and the effect of non-economic forces. In part, it is influenced by the purpose and application of such forecasts.

No matter how extensive the forecaster's knowledge, he is limited by the lack of complete and current information. No matter which technique or method he uses, he cannot allow for all variables. Perhaps the pressures of non-controllable factors has led to the current fashion to substitute for prediction—the less committing term projection.

Author Chambers, assistant director, Bureau of Business Research, University of Washington, summarizes these considerations in a well-organized and easy-to-read form. In his development of the subject of aggregate economic forecasting, he first outlines American economic fluctuations over the past 40 years, then traces business cycle theories from the Classical Tradition through today's post-Keynesian trends, discusses inter-industry and intersector relations among the parts of our economy. He also examines governmental fiscal, monetary and regulatory policies. He then summarizes the statistical tools, economic data, accounting systems and other significant indicators used in forecasting. To his credit, he also discusses the qualifications of a good forecastor: his need for objectivity and purpose; and the necessity for flexibility and adaptability to changing circumstances.

The applications and responsibilities of forecasting are also explored. In a final section on Economic Stabilization, for example, the problems of a reconciliation of the objectives of achieving an optimim rate of economic growth on the one hand, with that of minimizing cyclical fluctuations on the other, is examined.

Mr. Chambers' book should receive ready acceptance as a standard college textbook and as a handy reference for Financial Analysts.

* * *

MANAGING AMERICA'S ECONOMIC EXPLOSION. Edited by Dan H. Fenn, Jr. McGraw-Hill Book Company. New York, N. Y. 245 pages. $6.00.

Interesting and indeed stimulating discussions by 22 leading executives, economists and other experts on topics ranging from the broad issue of economic growth to new market trends and long-range company strategy, comprise the thesis of this book.

It is edited by Dan H. Fenn, Jr., editor of the Harvard Business School Bulletin. And among constructive ideas presented are: a provocative view of the direction our growth must take if it is to be meaningful; a novel answer to the question of how to achieve economic growth; why businessmen must respond to public responsibilities; the need for cooperation between government and industry; how to organize a company for reliable product-line planning in a time of growth; what a company can do when the economic growth of a foreign country threatens its markets; and the truth behind the battle over the cause of inflation.

* * *

READING FOR PLEASURE

(Editor's note: This is the second review of a book which—as pointed out in our last issue—undoubtedly will *not* add one iota of financial knowledge for our readers. Strictly a book for delightfully relaxed reading).

VOLTAIRE! VOLTAIRE! A novel by Guy Endore (author of "King of Paris.") Simon and Schuster, New York, N. Y. 507 pages. $5.95.

With all due respect to the author—who has done a remarkably fine job of research and combined it with a delightful and vivid imagination—the book really takes a bit of continued analysis as one goes through the pages.

The reviewer says this, as often he became confused (particularly in the more amatory chapters) as to whether it was Voltaire or Rousseau of whom the author was speaking. Still this does not take away the pleasure of reading and indeed becoming, in many instances, reacquainted with bits of fascinating French history.

The author also comes up with some delightful finds for anyone who has a penchant for knowing the origin of interesting phrases. For instance: we're all acquainted with the following, and some may remember that it's attributed to Voltaire: "I disapprove of everything you say, but I will defend to my death your right to say it." Remember? But it seems that scholars of Voltaire's writings have never been able to discover such an expression in anything he penned. And while some doubt that Voltaire ever did say it, or would have said it, we join the author who observes: "I don't."

And while book jacket blurbs are sometimes misleading, we'll go along 100% with the blurb on the "Voltaire! Voltaire!" book jacket which, in part states:

"In a brilliant onrushing style, highly individual and irresistibly readable, Guy Endore traces the parallel lives of these two men [Voltaire and Rousseau]. The story jumps from one man to the other, backward and forward in time. Yet it is held firmly in hand by its overriding theme: every thought, every feeling, every action in Rousseau's life was dictated by his combined love, hate and jealousy of Voltaire."

Financial Analysts Polled For Investment Opinions

Six hundred and seventy-one Financial Analysts were recently polled by Opinion Research Corporation in the second bi-annual series focusing on the investment image of leading companies and industries.

The Analysts, according to Opinion Research, regard the electrical equipment and electronics industry and the office equipment and pharmaceutical industries as having the most attractive growth possibilities over the next five years.

The latest research disclosed some dramatic shifts in opinion among Analysts since the first study in 1958.

The telephonic and telegraphic communications industry (which in 1958 was regarded as an attractive growth possibility by only 15% of the Analysts interviewed) was seen as a top growth industry by 48% of the Analysts in the 1961 study.

The electric utilities industry was regarded by 47% of Analysts interviewed in the 1961 study as a highly attractive growth possibility, compared with 21% of Analysts interviewed three years ago.

While not placed among the top growth industries, the food processing and banking industries also improved their growth position. On the other hand, the chemicals, paper, petroleum and steel industries, showed negative changes of from 20 to 12 percentage points.

In appraising industries and indi-

RADIO CORPORATION OF AMERICA

Dividend Notice

The following dividends have been declared by the Board of Directors:

First Preferred Stock

87½ cents per share on the First Preferred Stock, for the period October 1, 1961 to December 31, 1961, payable January 2, 1962, to stockholders of record at the close of business December 4, 1961.

Common Stock

A quarterly dividend of 25 cents per share on the Common Stock, payable October 23, 1961, to stockholders of record at the close of business September 15, 1961.

ERNEST B. GORIN,
Vice President and Treasurer

New York, N. Y., September 1, 1961

SOUTHERN NATURAL GAS COMPANY

Birmingham, Alabama

Common Stock Dividend No. 90

A regular quarterly dividend of 50 cents per share has been declared on the Common Stock of Southern Natural Gas Company, payable September 14, 1961 to stockholders of record at the close of business on August 31, 1961.

W. S. TARVER,
Secretary

Dated: July 29, 1961.

vidual companies, Financial Analysts assessed factors such as quality of management, operating facilities, organization, financial operations, products, expansion of markets, diversification, research, marketing, labor relations.

In addition, the research covered the kind and amount of information available to Analysts and the sources of this information. The study was directed by Thomas W. Benham and John B. Delbridge.

Common Stocks Pay Off

CASH DIVIDENDS paid on common stocks listed on the New York Stock Exchange edged close to $10 billion in 1960 and set a new annual record, *The Exchange* Magazine reported in a recent issue.

The Big Board's official publication noted that last year's total of $9,871,603,250 in cash common dividends represented an increase of 5.3%—or about half a billion dollars — over payments by the same companies in 1959.

This was the 13th year in the past 14 that cash common dividends hit a new high. The exception occurred in 1958, when total dividends showed a one per cent dip from 1957.

Slightly more than 87%—or 981—of the common stocks listed at year-end paid one or more cash dividends during 1960. Larger dividends were paid by 528 issues, while 348 paid the same amount. Smaller payments were made by 105 issues.

CONSOLIDATED NATURAL GAS COMPANY

30 Rockefeller Plaza
New York 20, N. Y.

DIVIDEND No. 55

THE BOARD OF DIRECTORS has this day declared a regular quarterly dividend of Fifty-Seven and One-Half Cents (57½¢) per share on the capital stock of the Company, payable November 15, 1961 to stockholders of record at the close of business October 16, 1961.

JOHN MILLER, Secretary
September 13, 1961

Interlake Iron

DIVIDEND No. 69

Interlake Iron Corporation, Cleveland, has declared a dividend of 40 cents per share on its common stock, payable Sept. 29, 1961, to stockholders of record at the close of business Sept. 15, 1961.

Maker of Iron and Ferroalloys

CHANGE OF ADDRESS:

Send your new address at least 30 days before the date of the issue with which it is to take effect. Address

FINANCIAL ANALYSTS JOURNAL
82 BEAVER STREET, ROOM 1512
NEW YORK 5, N. Y.

Send old address with the new, enclosing if possible your address label. The Post Office will not forward copies unless you provide extra postage. Duplicate copies cannot be sent.

We Are Pleased to Announce

that the merger of Southern Nevada Telephone Co. into Central Telephone Company (a subsidiary of Western Power & Gas Company) is scheduled to become effective September 21, 1961. The property will then be operated as Southern Nevada Telephone Division of Central Telephone Company. All stockholders of both companies will receive a detailed letter at an early date. Pursuant to previous agreement, Western Power & Gas Company is to purchase, on the effective date of the merger, more than a majority of the Central Telephone common stock to be received in the merger by former holders of Southern Nevada Telephone Co. common stock.

For the last 5 years, Southern Nevada Telephone Co., serving the Las Vegas area, has had the outstanding record of growth of any sizable telephone company in the country. Prior to merger, assets of Southern Nevada Telephone exceed $27,600,000, annual operating revenues exceed $8,250,000 and company-owned telephone stations exceed 56,500.

Reflecting the merger, Central Telephone Company and Subsidiaries (excluding the affiliated Southeastern Telephone Company which has 43,500 company-owned telephone stations) will have the following:

Combined Assets	$134,500,000
Annual Operating Revenues	$ 34,100,000
Company-Owned Telephone Stations	342,000

JUDSON LARGE, President

CENTRAL TELEPHONE COMPANY **WESTERN POWER & GAS COMPANY**

"Pass the Oil Can, Orville"

Aviation progress—from the faltering flight at Kitty Hawk to the latest continental jet hop—has depended in large part on the fuels and lubricants that bring planes to life.

The 12 horsepower engine that flew Orville and Wilbur Wright into history was no more demanding than a Model-T's motor. But today's more discriminating jet turbines need fuel that tests purer than the milk we drink and lubes that won't fail in the numbing upper air. The years between have been bridged by millions invested in oil laboratories and refineries.

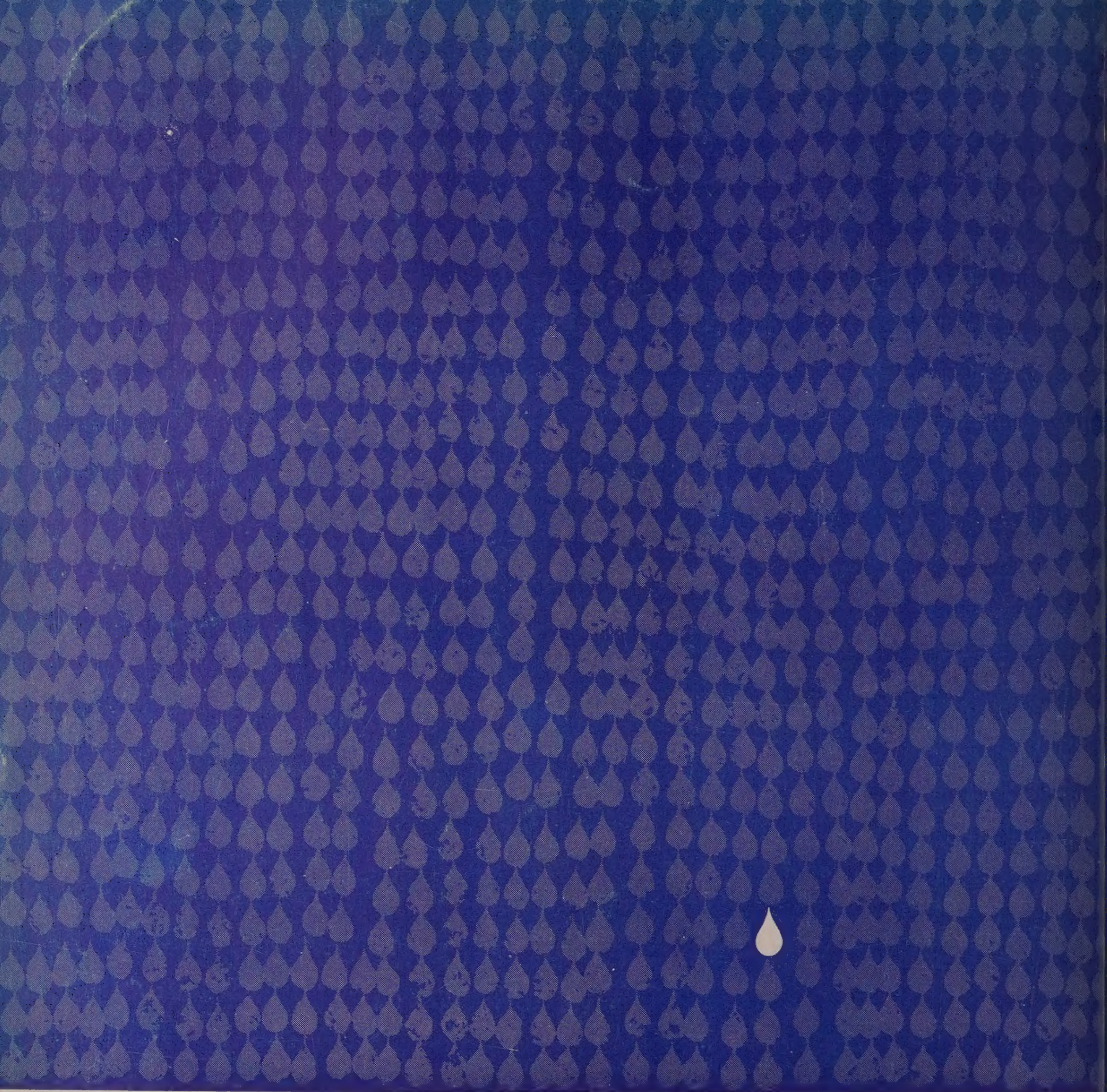
Sinclair Refining Company is proud of its role in aviation progress that dates back to the World War I "Jennies." Today, that company is a major supplier of jet fuel to airlines and the armed forces. *It supplies over 40 per cent of the lubricants used by all major scheduled airlines in the U.S.*

Passing the oil can in the competitive aviation markets calls for resourcefulness in research and manufacturing skill. *Where confidence counts with customers, Sinclair flies high.*

SAE—Sinclair salutes the Society of Automotive Engineers for stimulating the research and the exchange of technical data which has brought constant improvement in self-propelled vehicles, their engines and related products. Through its 25,000 members, the SAE keeps Americans moving safer and faster on land, air and sea. Organized in 1905, it is one of the largest engineering societies in the world.

Sinclair

SINCLAIR OIL CORPORATION • 600 FIFTH AVENUE • NEW YORK 20, N. Y.



A SINGLE DROP OF BLOOD CAN SAVE YOUR LIFE

Precious little blood can sometimes be spared for clinical testing. A baby, a burn victim, an older person. With Beckman instruments, you can perform vital analyses with the smallest samples. Even a drop.

With Beckman instruments you can unveil the subtle allure of a Paris perfume. You can track down the killer in rattlesnake venom. You can unscramble a puff of smoke.

Other Beckman instruments measure the acidity or alkalinity of the foods you eat. Or monitor smog and identify its contaminants. Or guide a space vehicle and record its sensations. Beckman instruments, systems, and components are at work throughout the world in laboratories, production lines, and defense installations.

Remarkable what you – and a Beckman instrument can do.

If you have a problem in analysis, measurement, or control, write to our Director of Marketing.

Beckman® INSTRUMENTS, INC.
Fullerton, California